DOCUMENT RESUME

ED 238 953 UD 023 079

TITLE	Elementary Enrichment Program (Reading, Mathematics and Language Arts Programs). Final Evaluation Report for Title 1, 1978-79.
INSTITUTION	Heuristics, Inc., Dedham, Mass.
SPONS AGENCY	Boston Public Schools, Mass.
PUB DATE	79
NOTE	116p.; For related document, see UD 023 077.
PUB TYPE	Reports - Evaluative/Feasibility (142)
EDRS PRICE	MF01/PC05 Plus Postage.
DESCRIPTORS	*Achievement Gains; *Compensatory Education; Educationally Disadvantaged; Elementary Education; Inservice Education; *Language Arts; Parent Participation; *Program Effectiveness; Program Evaluation; *Remedial Mathematics; Remedial Programs; *Remedial Reading
IDENTIFIERS	Massachusetts (Boston)

ABSTRACT

In this evaluation report for Boston's Title I Elementary Enrichment Program (reading, math, and language arts) for 1978-79, reading students in Grades 2 through 6 are shown as equalling or exceeding the specified criterion for success. Grade 1 students finished the year an average of two months below grade level. In math, gains at all grade levels far exceeded the specified program criteria. Grade 1 students finished the year about one month below grade level. The students in language arts (grades 3-5) also demonstrated gains in excess of the specified criteria. Other positive aspects of the program were excellent administration and supervision, appropriate materials and supplies, the perceived value of the program among staff, well-received orientation and inservice workshops for teachers and aides, and the formation of Parent Advisory Councils (PAC) in all but three Title I elementary schools. Problems were that private (not including parochial) schools continued to exhibit lower reading gains; facilities were not always adequate; there was not enough coordination between Title I and regular classes; Title I instruction sometimes overlapped with other supplementary programs; materials were sometimes delayed and/or of poor quality; responsibility for instructional supervision of aides was unclear; training for aides was not necessarily specific to their needs; new Title I teachers needed more beginning assistance; and almost half of local or district PAC meetings were conducted with less than five members present. (CMG)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED238953

Boston Public Schools
1978-1979 School Year

FINAL EVALUATION REPORT FOR TITLE I ELEMENTARY ENRICHMENT PROGRAM (READING, MATHEMATICS AND LANGUAGE ARTS PROGRAMS)

Prepared by
Heuristics, Inc.
Wellesley, Mass.

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

Submitted to the
Department of Management Information Services
Title I Evaluation Unit

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Margaret M. Callahan
Boston Public Schools
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

MARGARET M. CALLAHAN
Chapter I Program
26 Court St., 3rd fl.
Boston, MA 02108

UD023 079

TABLE OF CONTENTS

Page

EXECUTIVE SUMMARY i

INTRODUCTION 1

PROJECT DESCRIPTION 2

EVALUATION DESIGN 5

EVALUATION RESULTS 8

Instructional Component (Reading, Math, Language Arts)
Objectives. 8
Findings 8
Discussion 10
Product 10
Process (Program Operations) 29

In-Service Component 41
Objectives. 41
Findings 41
Discussion 41

Community-Relations Component 51
Objectives 51
Findings 51
Discussion 52

RELATED ISSUES 59

Extent of Overlap 59
Ratio of Direct to Indirect Services 64
Model C Pilot 68
Testing Program 79
Reading Gain by Program Attendance 86

SUMMARY 89

RECOMMENDATIONS 96

INTRODUCTION

This report presents a summary of the evaluation of the Title I Elementary Enrichment Program in the Boston Public Schools for the academic year 1978-79. The Title I Elementary Enrichment Program consists of Reading, Mathematics, and Language Arts Instructional Programs at the Elementary School level. Related services include In-service Training and Parental Involvement.

The Reading Program operated in 99 elementary schools including 70 public, 26 parochial and 3 private schools. Mathematics instruction was provided at 21 public and 9 parochial sites. Language Arts instruction (specifically requested by the schools' principal and parents) was offered at only 2 public schools. Approximately 9,000 students in grades 1-5 in the public elementary schools (grade 6 in parochial elementary schools) were served in the program.

The instructional staff of the program included over 200 Title I reading, math and language arts teachers. Each teacher was assisted by an instructional aide, also funded under Title I. Each teacher and aide served 42 students in six 45 minute periods, five days per week.

Individualized instruction was the principal mode of instruction in the program, either teacher directed or through an automated reading laboratory which was in three of the schools.

Administration of the Elementary Enrichment Program was the responsibility of the Acting Associate Director-Elementary. Nine Assistant Directors and a Liason with the Boston Archdiocese were responsible for coordination, supervision and staff training. A part-time Acting Assistant Director-Community Relations, two Community Relations Assistants and twelve Community Liason Aides coordinated Title I parent involvement activities.

A comprehensive evaluation design was employed and included standardized testing, interviews, observations, and questionnaires administered to Title I staff, classroom teachers, principals, parents, and PAC members.

Title I Component	Major Successes	Major Problems	Major Recommendations
Instructional Component (Elementary Reading Mathematics and Language Arts)	Students in grades 2 through 6 equalled or exceeded the specified criterion of .7 G.E. months per month of instruction in reading, and gained in percentile standing from pre- to posttest. Grade 1 reading students finished the year an average of 2 months below grade level. Gains in mathematics were large at all grade levels and far exceeded the projected criteria. Students gained in percentile rank from pre- to posttest. Grade 1 math students ended the year about 1 month below grade level. Language Arts students in grades 3-5 demonstrated gains in excess of the specified criterion, and advanced in percentile standing between pretest and posttest.	On the average, private school students (not including parochial students) continued to make lower gains in reading. Approximately 20% of the Title I teachers expressed concern with their assigned teaching facilities. About 20% of the teachers reported insufficient coordination between Title I and regular classes. In a few schools, teachers reported excessive overlap of Title I instruction with other supplementary programs.	Twenty-four recommendations were offered for program improvement. The major recommendations were: The Title I Administration should extend efforts to increase communication between Title I teachers and classroom teachers. The Title I Administration should strive to equip every Title I teacher with the best possible instructional facilities, particularly where problems are evident. The Title I Administration should disseminate a policy concerning the priority of Title I services and the need to avoid duplication with other supplementary services. Administration should identify overlapping supplementary services for each Title I student.

Title I Component	Major Successes	Major Problems	Major Recommendations
	The Title I Program is well established in the schools. It was well administered and supervision of Title I staff was excellent. Instruction was individualized to meet the needs of the child. Materials and supplies were appropriate. Regular school staff and Title I staff agreed that the program had a beneficial impact on the students in both academic and non-academic areas.	Approximately 1/3 of the Title I teachers reported poor print quality and delays in receiving their diagnostic tests and devices.	The Assistant Directors-Staff Development should insure that diagnostic tests and instruments are of appropriate print quality and are promptly delivered to all teachers.
In-Service Component	A variety of orientation and in-service workshops were conducted and well received by the Title I teachers.	Responsibility for instructional supervision of the teacher-aides is unclear. Training programs for aides were not necessarily specific to the skill area in which they worked.	The Assistant Directors-Staff Development should increase initial support to new Title I teachers, either on-site or in group settings to assist them in establishing programs at their schools.

Title I Component	Major Successes	Major Problems	Major Recommendations
	Title I aides were provided with orientation and in-service training in math and English composition skills, and other training along with teachers.	New Title I teachers requested more assistance in establishing student programs early in the year.	The Assistant Director-Aides should focus in-service training for aides on their specific needs within the particular program to which they are assigned.
Community Relations Component	Local PAC's were formed in all but 3 elementary Title I schools.	About 42% of the Local and/or District PAC meetings were conducted with less than 5 members present.	The Community Relations Assistants should design and conduct training for Community Liaison Aides on conducting effective meetings, community organization procedures, Title I guidelines and the like. The Community Relations Assistants and Community Liaison Aides should strengthen their efforts to increase the number of parents in attendance at local PAC meetings.

INTRODUCTION

This report presents the summative evaluation of the Title I Elementary Enrichment Program in the Boston Public Schools for the academic year 1978-79. The Title I Elementary Enrichment Program consists of Reading, Mathematics, and Language Arts Instructional Programs at the Elementary School level. Related services include In-service Training and Parental Involvement.

Four interim formative evaluation reports were prepared for the Elementary Enrichment Program during the 1978-79 school year. Interim evaluation reports to Project and School Personnel were submitted in November, 1978, and January, 1979. In addition, two Interim Executive Summary Reports were prepared for the Title I Director and District Superintendents in November and January. Where applicable, elements of the interim reports are included in this summative evaluation report.

This report is presented in the format prescribed by the Department of Management Information Services. The objectives or sets of objectives for each component of the program are followed by a brief presentation of the findings and a discussion of the data related to the findings. Recommendations are offered within each component as necessary.

PROJECT DESCRIPTION

Table 1 presents an overview of the Title I Elementary Enrichment Program in the Boston Public Schools. The program provided remedial instruction in Reading, Mathematics and Language Arts. The Reading Program operated in 99 elementary schools including 70 public, 26 parochial and 3 private schools. Mathematics instruction was provided at 21 public and 9 parochial sites. Language Arts instruction (specifically requested by the schools' principal and parents) was offered at only 2 public schools. Approximately 9,000 students in grades 1-5 in the public elementary schools (grade 6 in parochial elementary schools) were serviced in the program.

The instructional staff of the program included over 200 Title I reading, math and language arts teachers. Each teacher was assisted by an instructional aide, also funded under Title I. Each teacher and aide served 42 students in six 45 minute periods, five days per week.

Individualized instruction was the principal mode of instruction in the program. The instructional system utilized in each Title I classroom included informal and standardized diagnostic instruments, performance objectives, regular planning, and systematic instructional formats and records. These elements were interwoven to provide a comprehensive and systematic model for focusing instruction on individual student needs.

In addition, three schools were equipped with New

Table 1

Overview of Boston Title I
Elementary Enrichment Program*

Program		Schools	Teachers	Aides
Reading	Public	70	145	145
	Parochial	26	45.5	45.5
	Private	3	3	3
Total		99	193.5	193.5
Mathematics	Public	21	23	23
	Parochial	9	8.5	8.5
Total		30	31.5	31.5
Language Arts	Public	2	3	3
Totals		101	225.0	225.0

* Figures provided by the Title I office, May 10, 1979.

Century Reading Labs (NCEC). These labs were designed to individualize the instructional process completely by allowing each child to work at his or her own level and pace in a laboratory setting. Because of its highly automated nature, each lab could accomodate from 100 to 180 students per day in five 50 minute periods.

The Title I Project in Boston was administered by the Director-Department of Title I Programs. The administration of the Elementary Enrichment Program was the responsibility of the Acting Associate Director-Elementary. Nine Assistant Directors and a Liason between the Boston Public Schools and the Boston Archdiocese were responsible for program coordination, instructional supervision and staff training. In addition, a part-time Acting Assistant Director-Community Relations, two Community Relations Assistants and twelve Community Liason Aides coordinated Title I parent involvement activities.

EVALUATION DESIGN

The evaluation of the Title I Elementary Enrichment Program (reading, math and language arts) and accompanying support components for parents and teachers included a broad range and variety of data sources utilizing several data-gathering techniques. Table 2 presents an overview of the evaluation processes required in the assessment of each component in the program. As shown in the table, the evaluation considered all program aspects and intended audiences and included both program products and processes.

The process evaluation focused on such input and process variables as: program administration and supervision, communication, instructional facilities, instruction, materials and supplies, in-service, parent involvement and the like. Product data obtained to determine the programs' effects on participating children were students' standardized test results in reading, math and/or language arts. Techniques used to collect evaluation data from such data sources as administrators, teachers, parents and students included observations, interviews, questionnaires, rating scales, inspection of project documents and analyses of standardized test results.

The testing program employed a pretest - posttest norm-referenced evaluation design. This design was developed in accordance with recommendations for the implementation of Model A Title I evaluation designs. Students were pretested in October with standardized tests administered by the Title I staff. Posttesting of students in reading was accomplished

Table 2

Overview of Evaluation Design and Activities
Data Gathering Technique by Relevant Public Matrix

Relevant Public \ Data Gathering Technique	Interview	Observation	Questionnaires	Achievement Test Scores	Materials & Environment Rating Forms	Project Documents
Title I Administration	X					X
Principals	X		X			
Title I Teachers	X	X	X		X	X
Instructional Aides		X	X			
Classroom Teachers			X			
Students		X		X		
Parents			X			
Community Relations Staff	X		X			X
PAC Members			X			

under the City-wide Testing Program of the Boston Public Schools. Language Arts and Math post-testing were administered by Title I staff. (Further discussion of the testing program is presented later in this report under Related Issues).

In addition to the above activities, this evaluation addressed other issues of concern to administration. These were: assessing the extent of overlap of services between Title I and other supplementary projects in the schools; computing a ratio of direct to indirect services; testing; and pilot testing an alternative evaluation design model (Model C).

EVALUATION RESULTS

Instructional Component

TERMINAL INSTRUCTIONAL OBJECTIVES

Reading

Students who participate in the Title I Reading Program will demonstrate a reduction of reading deficiency as measured by pre-post standardized reading tests in Word Knowledge and Reading of the Metropolitan Achievement Tests. The growth anticipated as the terminal measure is a grade equivalent increase of at least .7 months per month of instruction.

Math

Students who participate in the Title I Mathematics Program will demonstrate a reduction of reading deficiency as measured by pre-post standardized mathematics tests in Computation, Concepts and Problems of the California Achievement Tests. The growth anticipated as the terminal measure is a grade equivalent increase of at least .7 months per month of instruction.

Language Arts

Students who participate in the Title I Language Arts Program will demonstrate a reduction of Language Arts deficiency as measured by pre-post standardized Language Arts tests in Language Arts of the California Achievement Tests. The growth anticipated as the terminal measure is a grade equivalent increase of at least .7 months per month of instruction.

FINDINGS

Reading

Students were administered the reading subtests of the Metropolitan Achievement Tests (1970 edition) as a pretest and

the reading survey of the MAT (1978 edition) as a posttest measure of reading achievement. Based upon a comparison of the converted pretest to posttest scores, Title I students generally exceeded the expected criterion of G.E. gain at each grade level. In grade 1 where only posttests were available, Title I students ended the year two months below grade level. Examination of national percentile ranks and corresponding NCE scores indicated that gains in reading achievement were demonstrated in each grade and group with the exception of grade 5 private school Title I students. Gains were comparable for public, parochial and NCEC schools. Gains for private school (non-parochial) Title I students were lowest among the groups.

Mathematics

Based upon the test data obtained from the mathematics subtests of the California Achievement Tests, students at all grade levels far exceeded the criterion stated on the mathematics terminal objective for Title I Math students. Average grade equivalent gain rates on Total Math ranged from 12 to 15 months gain during the seven months of instruction between administrations of the pre and posttests. Grade 1 students, for whom only posttest data were available, ended the year one month below grade level. Large percentile and NCE gains were also shown on all subtests at all grade levels.

Language Arts

Based upon pre and posttesting with the Language Arts subtests of the California Achievement Tests, Title I Language Arts students in grades 3, 4 and 5 exceeded the projected criterion of gain. Grade equivalent gains ranged from 1.2 to 2.3 for grades 3-5 in Total Language Arts. Gains in national percentile rank were similarly strong, ranging from an average of 12 to 40 centiles in Total Language Arts during the seven months of instruction between pre- and posttesting.

DISCUSSION

Product

Reading

Test data on reading outcomes were obtained by administration of the Metropolitan Achievement Tests (MAT) (1970 and 1978 editions) as described in the evaluation design. Since the MAT (1978 edition) was used as the posttest measure of reading achievement, statistical analyses of gain were not used to compare pre- and posttest changes. Instead, the mean pretest standard score in Total Reading from the 1970 edition of the MAT was transformed to the comparable Reading standard score of the 1978 edition of the MAT. (These transformations were accomplished via conversion tables supplied by the test publisher.) The mean standard scores for each group and grade were then converted to corresponding grade equivalent, percentile and NCE scores. These are presented in Table 3.

Table 3

Summary of the Grade Equivalent, Percentile and NCE Scores in Total Reading on the Metropolitan Achievement Tests

	N	Grade Equivalent Pre	Grade Equivalent Post	Grade Equivalent Gain	%ile Pre	%ile Post	%ile Gain	NCE Pre	NCE Post	NCE Gain
PUBLIC SCHOOLS										
Grade 1	763	--	1.6	--	--	40	--	--	44.7	--
2	732	1.4	2.3	0.9	8	32	24	20.4	40.1	19.7
3	650	1.9	2.5	0.6	8	24	16	20.4	35.1	14.7
4	805	2.3	3.0	0.7	14	22	8	27.2	33.7	6.5
5	1050	2.9	3.9	1.0	16	28	12	29.1	37.7	8.6
PAROCHIAL SCHOOLS										
Grade 1	278	--	1.6	--	--	42	--	--	45.8	--
2	262	1.5	2.4	0.9	16	38	22	29.1	43.6	14.5
3	236	2.2	2.7	0.5	18	32	14	30.7	40.1	9.4
4	268	2.6	3.3	0.7	22	30	8	33.7	39.0	5.3
5	243	3.3	4.1	0.7	24	30	6	35.1	39.0	3.9
6	176	4.2	5.5	1.3	30	38	8	39.0	43.6	4.6
PRIVATE SCHOOLS										
Grade 1	22	--	1.4	--	--	30	--	--	39.0	--
2	18	1.3	1.9	0.6	6	16	10	17.3	29.1	11.8
3	14	1.7	2.1	0.4	4	10	6	13.1	23.0	9.9
4	14	2.2	2.6	0.4	11	16	5	24.2	29.1	4.9
5	12	2.7	3.0	0.3	14	14	0	27.2	27.2	0
6	11	3.3	3.4	0.1	16	18	2	29.1	30.7	1.6
NCEC SCHOOLS										
Grade 1	18	--	2.1	--	--	72	--	--	62.3	--
2	49	1.4	2.4	1.0	10	38	28	23.0	43.6	20.6
3	33	2.1	2.8	0.7	16	32	16	29.1	40.1	11.0
4	48	2.5	3.7	1.2	20	38	18	32.3	43.6	11.3
5	61	3.0	4.3	1.3	20	34	14	32.3	41.3	9.0
ALL PARTICIPANTS										
Grade 1	1081	--	1.6	--	--	40	--	--	44.7	--
2	1061	1.4	2.3	0.9	10	34	24	23.0	41.3	18.3
3	933	1.9	2.6	0.7	11	26	15	24.2	36.5	12.3
4	1135	2.4	3.0	0.6	16	24	8	29.1	35.1	6.0
5	1366	2.9	3.9	1.0	18	28	10	30.7	37.7	7.0
6	187	4.1	5.3	1.2	28	36	8	37.7	42.5	4.8

The objective called for the monthly G.E. gain rate to exceed .7 months per month of instruction, or a G.E. gain of 6 months or greater between pretest and posttest. This gain was achieved at all grade levels when the results for all participants are examined. However, as shown in Table 3 some variation in achievement was found among the grades and groups. For example, in grades 2, 3, 5 and 6, all participants achieved, on the average, at or above the norm grade equivalent gain of 7 months G.E. in the seven months between pretest and posttest. Students in grade 4 gained an average of 6 months in reading between administrations of the pre- and posttests, slightly below the norm rate but above the projected rate of gain called for in the objective.

On the average, public school students in grades 2 to 5 demonstrated G.E. gains greater than the expected criterion, and in grades 2, 4, and 5 equaled or exceeded the norm rate. Similarly, parochial school students in all but grade 3 achieved grade equivalent gains at or beyond projected and norm G.E. rates of gain. On the other hand, private school students in all grades failed to exceed the projected G.E. gain except at grade 2. NCEC students in all grades surpassed the expected 6 months of G.E. gain in reading. (The average grade equivalent gains for each grade are graphically portrayed in Figure 1.)

In grade 1, only posttest scores were available for the students. On the average, students tested approximately two

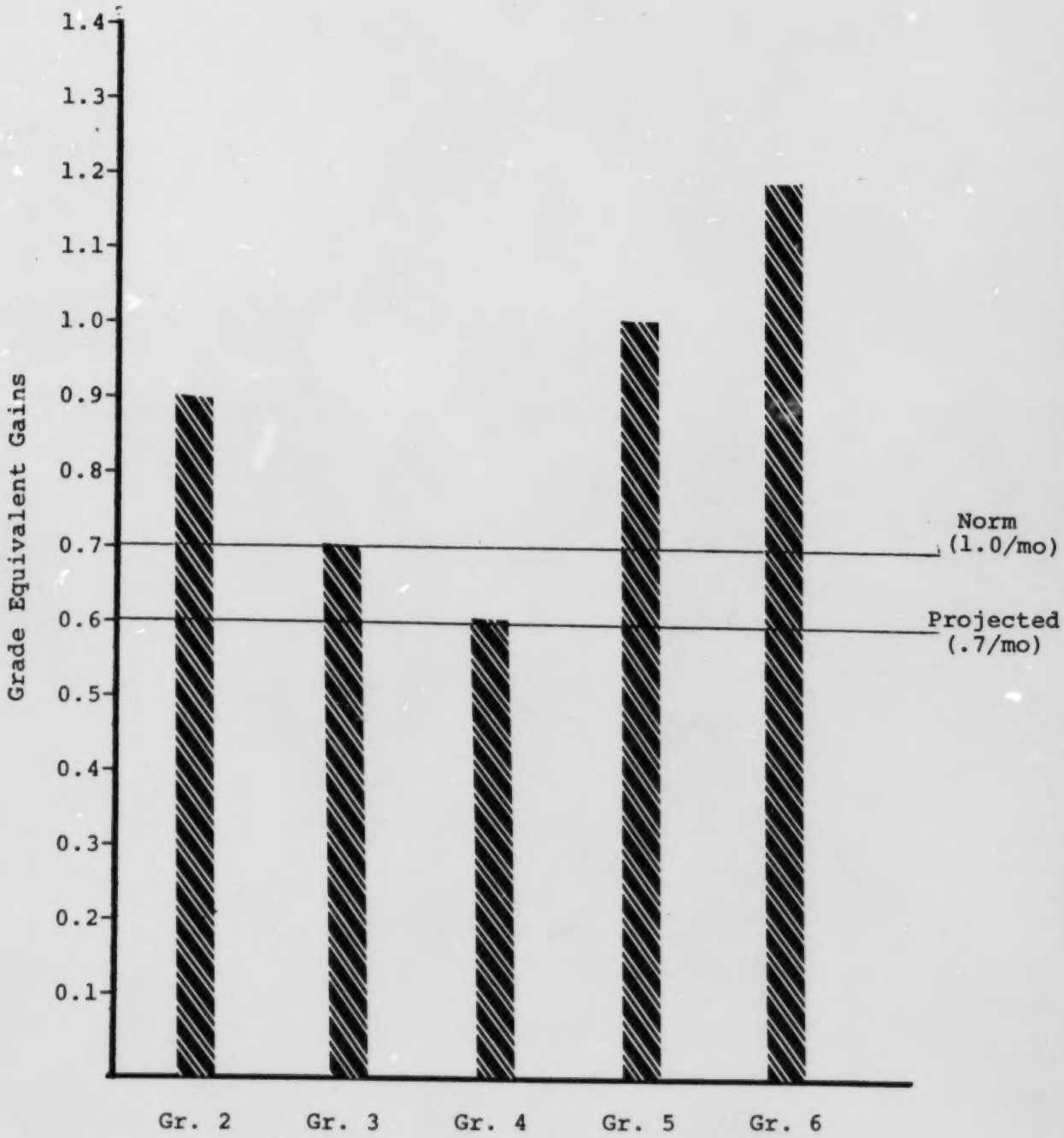

Figure 1: Grade Equivalent Gains in Total Reading of All Participants Grades 2-6

months below grade level at the time of posttesting. Private school students scored lowest (1.4) among the different Title I programs while NCEC students finished above grade level (2.1).

Another, and perhaps more accurate, perspective for interpreting the degree of achievement of the Title I students, is to examine achievement relative to other children at the same grade level. Also shown in Table 3 are mean pre- and posttest scores in reading expressed as national percentile rank and accompanying NCE scores for each grade and group. An increase in percentile standing from pre- to posttest would indicate that students were achieving more than they had in the past, moving up in their respective norm group standing. As the table shows, the children entered the program well below average (50th percentile). Pretest means for all participants ranged from the 10th to the 28th percentile. While posttest means still remained below the median nationwide for all participants, in all grades students, on the average, did advance in percentile standing from pretest to posttest. Percentile rank gains in reading for all participants ranged from 8 to 24 centiles. (Percentile rank gains in reading for all program participants in grades 2 through 6 are graphically presented in Figure 2.)

Examination of percentile scores for the different groups shows average gains made in every case except the fifth grade students in the private school group. The largest gains were made by NCEC students; the smallest gains by private school students.

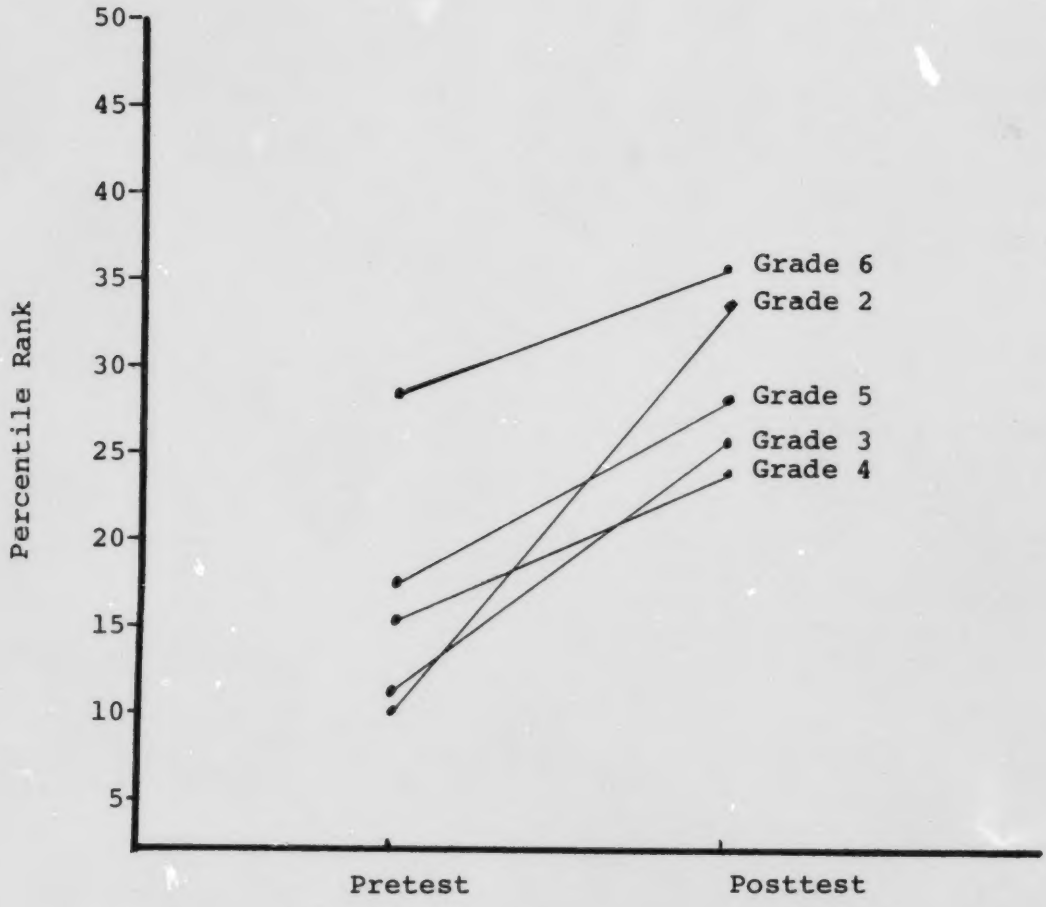

Figure 2: Gains in Percentile Rank in Reading for Grades 2-6 - All Participants

Another view of the impact of the program is gained from an examination of the NCE scores for each grade and group. NCE scores are Normal Curve Equivalent scores, a score with a mean of 50 and a standard deviation of 21.06. The scale was developed and disseminated by the U.S. Office of Education. The NCE scale closely resembles the percentile distribution, hence has the interpretive qualities similar to percentile scores. However, the scale is also an equal interval scale and can be used in arithmetic calculations, while percentiles cannot. The NCE scale permits percentile scores from any norm referenced test to be transformed to an NCE score. These scores can then be aggregated across the state or country to determine the overall impact of Title I. According to OE materials, "Whenever an evaluation shows an NCE gain greater than zero, it means that the Title I pupils profitted from participation in the project. In general, the larger the NCE gain, the more effective the project."

The NCE gains (presented in Table 3) correspond closely to the percentile changes previously discussed. Examination of the NCE gains show that the Title I project has had a positive effect upon its participants in all grades. Only in grade 5 at the private schools was the NCE gain equal to zero, indicating that the students gained enough only to maintain their previous standing in reading achievement.

Mathematics

The mathematics subtests of the California Achievement Test (1970 edition) were administered in October and May to students receiving Title I Math instruction. The results of the statistical analyses used to compare pretest to posttest changes for grades 2 through 6 are summarized in Table 4 through 6. (Statistical analyses were performed by the test publisher.) Statistically significant gains were found for all grade levels in all groups (public, parochial and all participants combined) for all Math subtests.

Table 4 presents a summary of the Total Math grade equivalent, percentile and NCE scores associated with the standard scores (Achievement Development Scale Scores) used in the statistical analyses. (Grade equivalent, percentile and NCE scores for the math subtests for each group and grade are presented in Tables 5 (Math Computation) and 6 (Math Concepts). The results presented in Table 4 are shown for grades 1-5 in the public schools, grades 1-6 in the parochial schools and for grades 1-6 for all groups combined. Only posttests were administered to grade 1 students, and the corresponding grade equivalent, percentile and NCE scores for these students are also shown in this Table.

Large gains in grade equivalent scores were made at all grade levels in both the public and parochial schools on the subtests and Total Math scores. The gains far exceeded those

Table 4

Summary of the Mean Grade Equivalent, Percentile and NCE Scores in Mathematics on the California Achievement Test - Total Math

	N	Grade Equivalent Pre	Grade Equivalent Post	Grade Equivalent Gain	%ile Pre	%ile Post	%ile Gain	NCE Pre	NCE Post	NCE Gain
PUBLIC SCHOOLS										
Grade 1	90	--	1.6	--	--	45	--	--	47.4	--
2	110	1.3	2.6	1.3	21	47	26	33.0	48.4	15.4*
3	117	2.1	3.4	1.3	15	40	25	28.2	44.7	16.5*
4	182	3.1	4.4	1.3	19	42	23	31.5	45.8	14.3*
5	136	3.6	5.1	1.5	15	34	19	28.2	41.3	13.1*
PAROCHIAL SCHOOLS										
Grade 1	48	--	1.8	--	--	57	--	--	53.7	--
2	44	1.7	2.9	1.2	33	63	30	40.7	57.0	16.3*
3	49	2.2	3.6	1.4	17	48	31	29.9	48.9	19.0*
4	53	3.5	4.7	1.2	32	50	28	40.1	50.0	9.9*
5	39	4.1	5.5	1.4	24	45	21	35.1	47.4	12.3*
6	38	5.1	6.5	1.4	27	46	19	37.1	47.9	10.8*
ALL PARTICIPANTS										
Grade 1	137	--	1.7	--	--	51	--	--	50.5	--
2	154	1.4	2.7	1.3	23	51	28	34.4	50.5	16.1*
3	166	2.2	3.5	1.3	16	43	27	29.1	46.3	17.2*
4	235	3.2	4.4	1.2	23	42	19	34.4	45.8	11.4*
5	175	3.7	5.2	1.5	17	38	21	29.9	43.6	13.7*
6	38	5.1	6.5	1.4	27	46	19	37.1	47.9	10.8*

*denotes statistically significant pretest to posttest standard score gain

Table 5

Summary of the Mean Grade Equivalent, Percentile and NCE Scores in Mathematics on the California Achievement Test - Math Computation

	N	Grade Equivalent Pre	Grade Equivalent Post	Grade Equivalent Gain	%ile Pre	%ile Post	%ile Gain	NCE Pre	NCE Post	NCE Gain
PUBLIC SCHOOLS										
Grade 1	90	--	1.7	--	--	53	--	--	51.6	--
2	110	1.4	2.7	1.3	24	51	27	35.1	50.5	15.4*
3	119	2.1	3.7	1.6	15	50	35	28.2	50.0	21.8*
4	183	3.3	4.6	1.3	24	53	29	35.1	51.6	16.5*
5	139	3.7	5.3	1.6	15	40	35	28.2	44.7	16.5*
PAROCHIAL SCHOOLS										
Grade 1	48	--	2.1	--	--	68	--	--	59.9	--
2	44	1.8	3.0	1.2	38	74	36	43.6	63.5	19.9*
3	49	2.2	4.0	1.8	18	62	44	30.7	56.4	25.7*
4	53	3.6	4.8	1.2	34	64	30	41.3	57.5	16.2*
5	39	4.2	5.6	1.4	24	47	23	35.1	48.4	13.3*
6	38	5.2	6.6	1.4	29	50	21	38.3	50.0	11.7*
ALL PARTICIPANTS										
Grade 1	137	--	1.8	--	--	56	--	--	53.2	--
2	154	1.6	2.8	1.2	28	61	33	37.7	55.9	18.2*
3	168	2.1	3.7	1.6	15	50	35	28.2	50.0	21.8*
4	236	3.4	4.7	1.3	25	53	28	35.8	51.6	15.8*
5	178	3.9	5.4	1.5	18	40	22	30.7	44.7	14.0*
6	38	5.2	6.6	1.4	29	50	21	38.3	50.0	11.7*

*denotes statistically significant pretest to posttest standard score gain

Table 6

Summary of the Mean Grade Equivalent, Percentile and NCE Scores in Mathematics on the California Achievement Test - Math Concepts

	N	Grade Equivalent Pre	Grade Equivalent Post	Grade Equivalent Gain	%ile Pre	%ile Post	%ile Gain	NCE Pre	NCE Post	NCE Gain
PUBLIC SCHOOLS										
Grade 1	90	--	1.4	--	--	39	--	--	44.1	--
2	112	1.2	2.5	1.3	20	41	21	32.3	45.2	12.9*
3	119	2,2	3.1	0.9	22	32	10	33.7	40.1	7.4*
4	185	2.7	4.0	1.3	17	37	20	29.9	43.0	13.1*
5	136	3.4	4.7	1.3	17	30	13	29.9	39.0	9.1*
PAROCHIAL SCHOOLS										
Grade 1	49	--	1.5	--	--	43	--	--	46.3	--
2	44	1.7	3.0	1.3	35	60	25	41.9	55.3	13.4*
3	50	2.2	3.2	1.0	22	36	14	33.7	42.5	9.8*
4	54	3.4	4.6	1.2	36	48	12	42.5	48.9	6.4*
5	39	4.0	5.2	1.2	29	43	14	38.3	46.3	8.0*
6	38	4.9	6.2	1.3	30	44	14	39.0	46.8	7.8*
ALL PARTICIPANTS										
Grade 1	139	--	1.4	--	--	39	--	--	44.1	--
2	156	1.4	2.6	1.2	25	46	21	35.8	47.9	12.1*
3	169	2.2	3.2	1.0	22	36	14	33.7	42.5	9.8*
4	239	3.0	4.1	1.1	23	37	14	34.4	43.0	8.6*
5	175	3.6	4.9	1.3	23	34	11	34.4	41.3	6.9*
6	38	4.9	6.2	1.3	30	44	14	39.0	46.8	7.8*

*denotes statistically significant pretest to posttest standard score gain

projected for the seven months of instruction between pre- and posttesting. Average gains in grade equivalent scores in Total Math for public and parochial school students combined ranged from 12 to 15 G.E. months during the seven months of instruction between pre- and posttestings. At each grade level, parochial school students tended to have higher pretest and posttest scores, but only in grade 3 did they gain at a faster rate than public school students.

In grade 1 public school students ended the year 2 months below grade level at the time of testing, while parochial school students achieved at grade level in Total Math. The combined scores for public and parochial school grade 1 students placed them an average of 1 month G.E. below grade level. (Average grade equivalent gains in Total Math for all participants in grades 2-6 are graphically presented in Figure 3.)

Table 4 also presents the percentile rank and NCE scores for Total Math for public and parochial school students in grades 1-6. (Corresponding percentile and NCE scores for each group and grade on the math subtests are presented in Tables 5 and 6.) As the figures in Table 4 indicate, student achievement in Total Math exceeded their previous rate of growth. Mean percentile rank gains were large, ranging from 19 to 31 percentile points. Public and parochial students at all grade levels advanced in percentile standing from pre to posttests. (The percentile gains for all participants in Total Math in grades 2-6 are portrayed in Figure 4.)

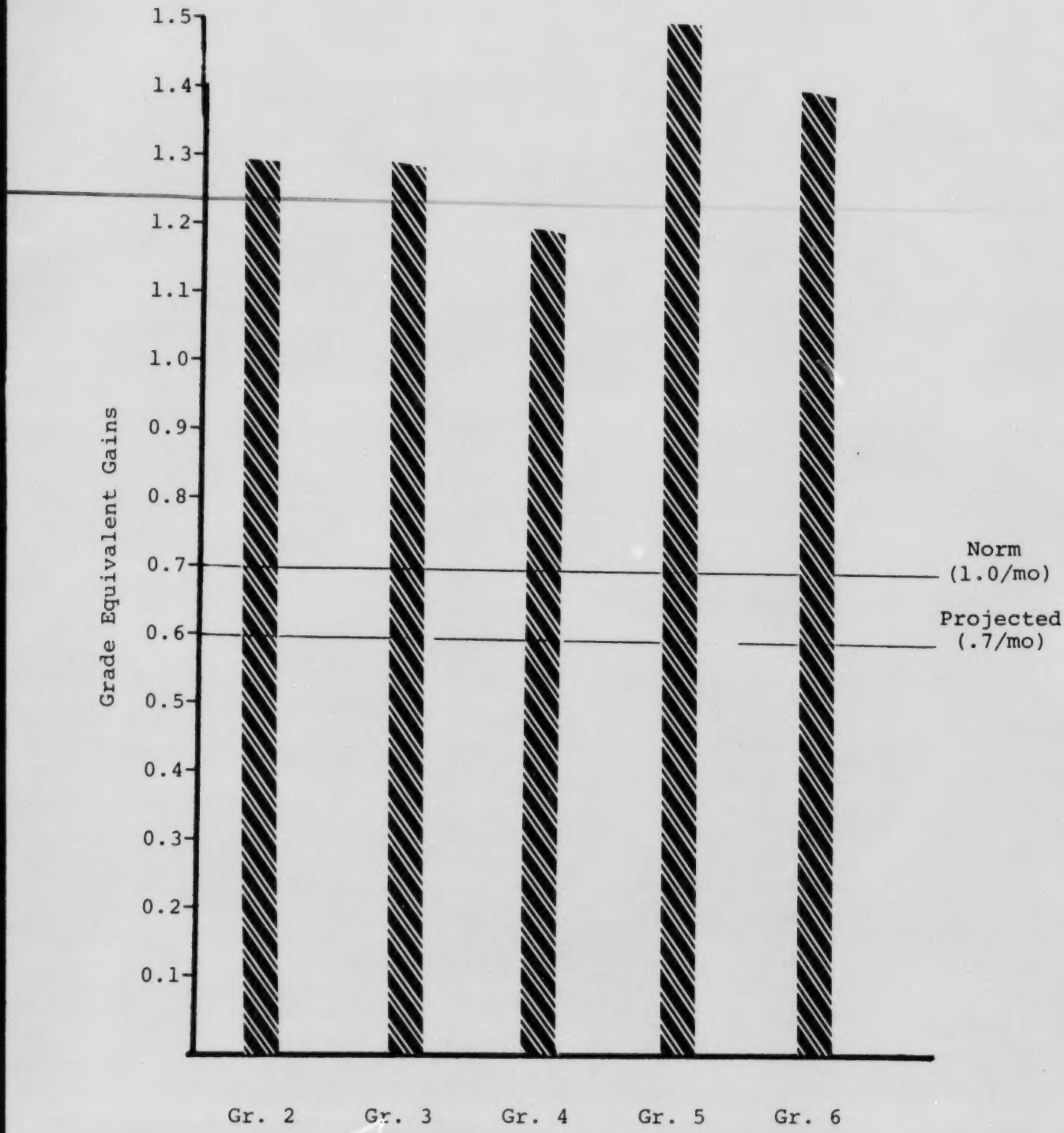

Figure 3: Grade Equivalent Gains in Total Math of All Participants Grades 2-6

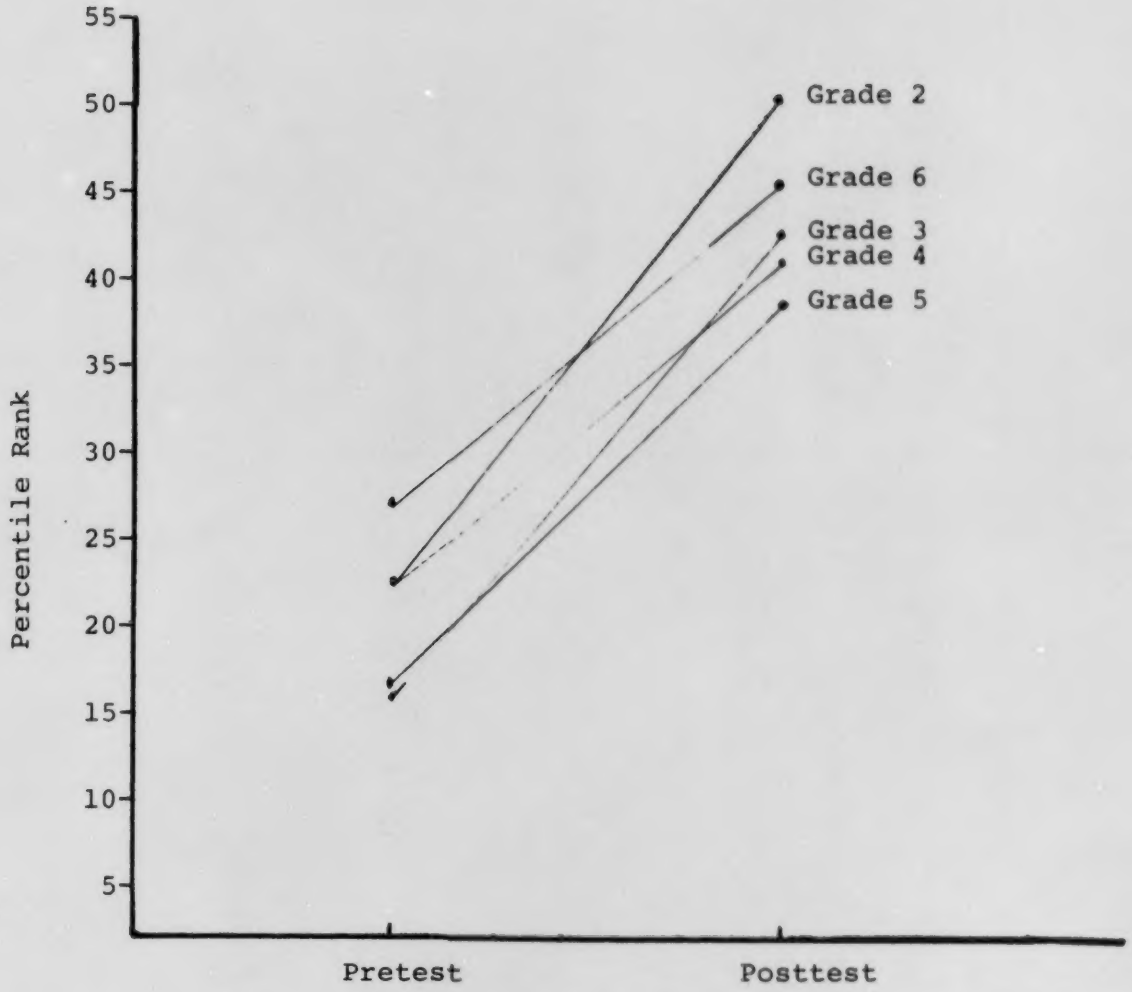

Figure 4: Gains in Percentile Rank in Total Mathemetics for Grades 2-6 - All Participants

The gains in NCE scores in Total Math reflected the substantial improvement the students demonstrated in their grade equivalent and percentile rank gains. NCE score gains ranged from 9.9 to 19.5 NCE units, corroborating the positive impact of the Title I mathematics program.

Language Arts

The Language Arts subtests of the California Achievement Tests were also administered in October and May to students in grades 3, 4 and 5 enrolled in the Title I Language Arts Program. The results of the statistical analyses used to compare pretest to posttest changes for grades 3-5 are summarized in Table 7. (Statistical analyses were performed by the test publisher.) Statistically significant gains were found for all grade levels for all Language Arts subtests.

Table 7 also presents a summary of the average grade equivalent, percentile and NCE scores for each Language Arts subtest and Total Language Arts score for grades 3-5. Grade equivalent gains in Total Language Arts and the subtest scores were substantial. For example, in Total Language Arts gains ranged from 12 months (grade 4) to 23 months (grade 5). Grade 4 students gained, on the average, 20 months G.E. grom pre- to posttesting in Total Language Arts. (These data are graphed in Figure 5.)

The various Language Arts scores were also transformed into corresponding percentile and NCE scores, also shown in Table 7. Mean percentile gains in Total Language Arts were large for each

Table 7

Summary of the Scores on the Language Arts Subtests of the California Achievement Test Grades 3-5

Grade	N	Grade Equivalent Pre	Grade Equivalent Post	Grade Equivalent Gain	%ile Pre	%ile Post	%ile Gain	NCE Pre	NCE Post	NCE Gain
				LANGUAGE MECHANICS						
3	26	2.0	4.1	2.1	18	61	43	30.7	55.9	25.2*
4	28	3.1	4.6	1.5	30	49	19	39.0	49.5	10.5*
5	43	3.2	5.3	2.1	18	44	26	30.7	46.8	16.1*
				LANGUAGE USAGE AND STRUCTURE						
3	26	2.0	3.4	1.4	23	43	20	34.4	46.3	11.9*
4	27	3.3	3.6	0.3	37	35	-2	43.0	41.9	-1.1*
5	42	3.0	5.5	2.5	18	52	34	30.7	51.1	20.4*
				LANGUAGE ARTS TOTAL						
3	26	2.0	4.0	2.0	17	57	40	29.9	53.7	23.8*
4	27	3.2	4.4	1.2	33	45	12	40.7	47.4	6.7*
5	42	3.3	5.5	2.2	18	47	29	30.7	48.4	17.7*
				SPELLING						
3	26	2.7	3.8	1.1	40	60	20	44.7	55.3	10.6*
4	27	3.7	4.6	0.9	43	54	11	46.3	52.1	5.8*
5	42	3.5	4.7	1.2	22	32	10	33.7	40.1	6.4*

*denotes statistically significant standard score gain from pretest to postest

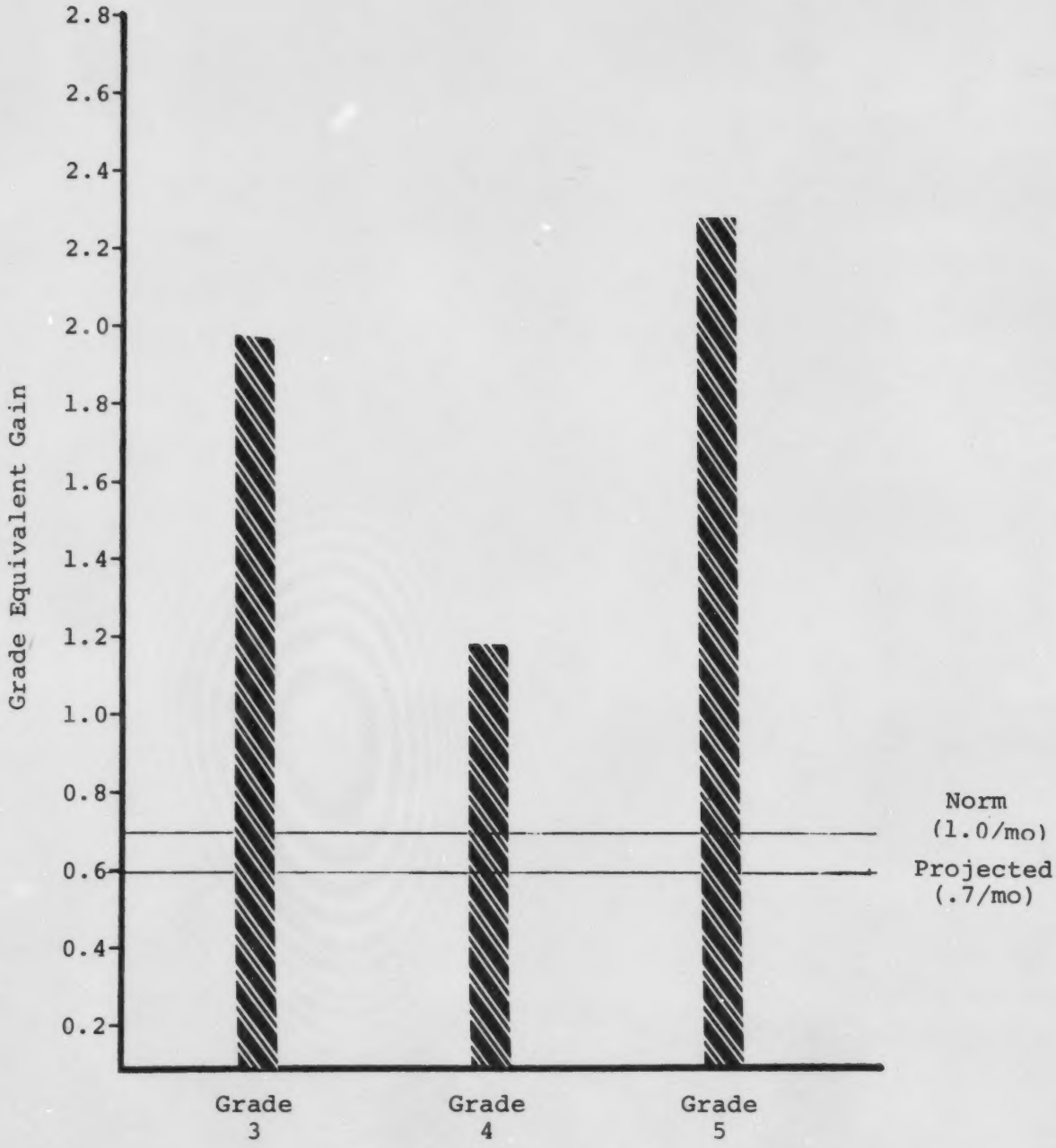

Figure 5: Grade Equivalent Gains
in Total Language Arts
Grades 3-5

grade level, and ranged from 12 to 40 centiles. (The percentile gains for students in grades 3-5 in Total Language Arts are graphically portrayed in Figure 6.) Percentile gains were also shown on the various subtests except for Language Usage and Structure at grade 4.

The gains in NCE scores in Total Language Arts reflected the huge gains demonstrated by the students in grade equivalents and percentile ranks. NCE score gains in Total Language Arts averaged 23.8 units for grade 3 students, 6.7 units for grade 4 students and 17.7 units for grade 5 students. The large NCE score gains shown by the students at each grade level corroborated the positive effects of the Title I Language Arts instruction.

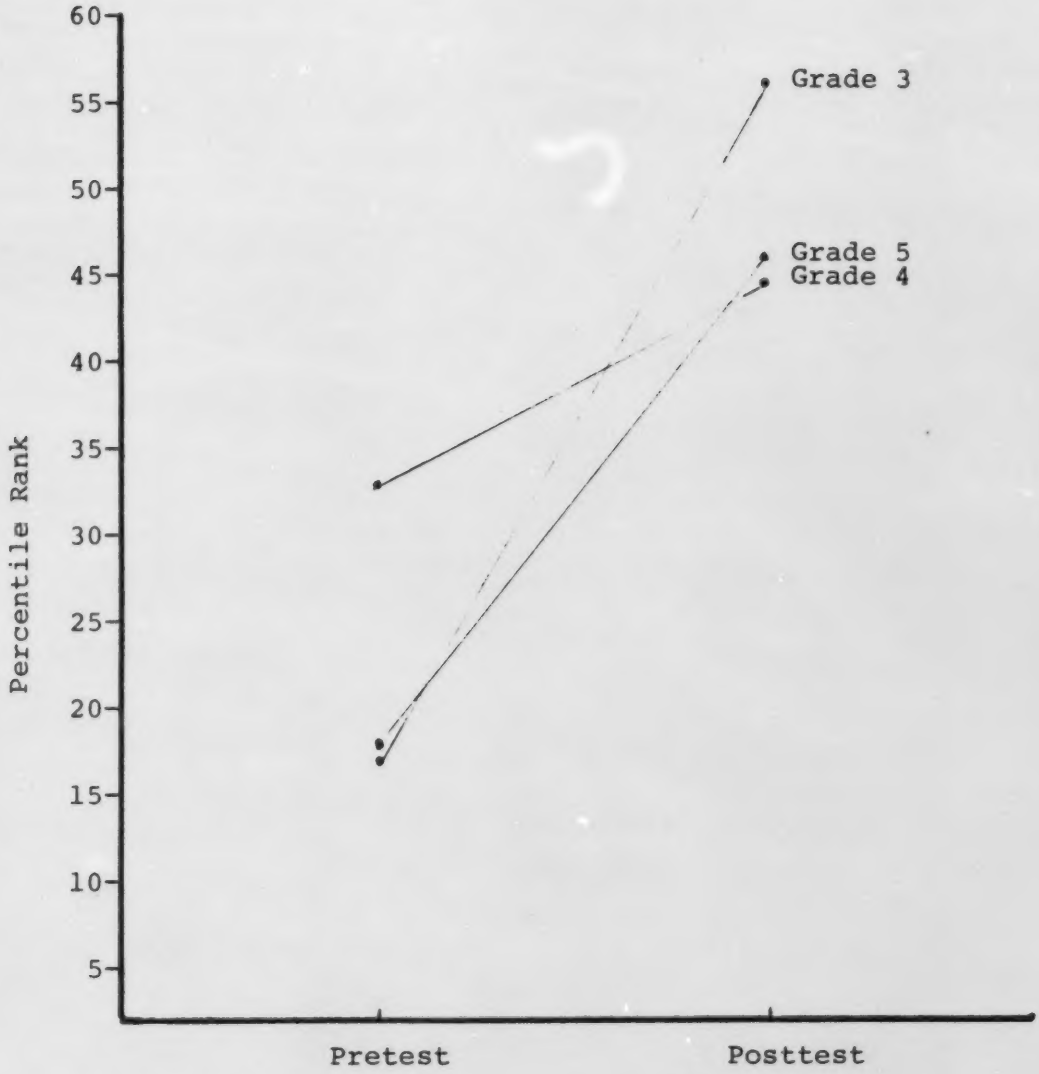

Figure 6: Gains in Percentile Rank in Total Language Arts for Grades 3-5

Process

Discussed below is a summary of the evaluation of those inputs and operational processes related to the proper functioning of the Title I Program and the attainment of its reading, math and language arts instructional objectives. Included are administration and supervision, communication, instructional facilities, instruction, New Century Reading Laboratory, Language Arts, parental communication, student evaluation, teacher aides, and value percieved by others. This discussion is based upon site visits to Title I classrooms, personal interviews and questionnaires administered to administrators, supervisors, principals, Title I teachers, teacher aides, classroom teachers, and parents.

Administration and Supervision

In general, the administration and supervision of the program was favorably perceived. According to Title I teachers, the program guidelines and objectives had been clearly disemminated. Principals, Title I teachers and regular school staff reported that they clearly understood the objectives of the program. In general, the principals were satisfied with their communication with the Title I administration and felt they had recieved adequate information regarding the Title I operations.

All but a very few of the program teachers were satisfied with the cooperation of their principals. They also reported that the Title I administration had been helpful and responsive to their needs. The Title I staff were especially pleased with

the support and direction provided them by the Assistant Directors-Staff Development. Some of the teachers, (approximately 20%), did indicate, however, that they could have used more specific help in establishing programs for their students early in the year. This was especially true with the new Title I teachers, where over 40% reported such a need.

Communication

While the majory of the Title I staff indicated that they had maintained adequate communication with classroom teachers in their school; a substantial proportion of Title I teachers, (20%), reported that they still experienced difficulties in this area. Importantly, however, over one-half of the Title I staff indicated that even greater communication with classroom teachers was necessry. On the other hand, principals and classroom teachers generally thought that their communication with Title I staff was adequate. Further, less than one-fifth of the classroom teachers and principals felt that students' participation in Title I substantially interfered with their regular school classes.

Concerning the level of communication Title I teachers enjoy with their collegues citywide, approximately one-third of the staff reported a need for better communication among Title I teachers in the target area schools. Thiry percent of the reading teachers thought that greater opportunities for the exchange of ideas, methods and materials among Title I staff should be provided. Quite understandably, a slightly

higher proportion of new teachers felt this way.

Facilities

The majority of the Title I teachers were satisfied with the teaching facilities they had been provided for instruction. Nevertheless, a number of teachers (approximately one-fifth) did report teaching stations that were less than satisfactory. The areas identified by the teachers as most troublesome included excessive outside distractions, room size and temperature. Other problems, such as poor accustics, lighting and inadequate materials storage space were also cited by the teachers. (Specific facilities problems were identified in the Interim Reports.) Unfortunatly, many of the problems cited by the staff were not under the control of the Title I Project administration. Strong efforts have continually been made by the administration to alleviate many of these problems, but efforts to provide every teacher with adequate instructional facilities should be continued.

Instruction

Instruction in the program primarily focused on the individual student. All of the Title I teachers reported they were able to sucessfully identify individual learning needs for their students and most reported planning an individual instructional sequence for each child. For the most part, the Title I staff felt that classroom teachers had cooperated fully in disgnosing student needs.

All but two of the teachers reported that their lessons provided for individualized instruction, in either small groups or one-to-one situations. This was generally confirmed by observations of the math and reading classes. Observations revealed that a small proportion of teachers (less than five percent) still continued to provide whole group instruction, however, this practice was not widespread.

Almost 90% of the teachers reported that the Title I Skills Profile Chart was a useful instructional guide. A similar proportion of teachers agreed that the performance objectives were appropriate for the type of student they served. A small number of teachers (almost ten percent) however, were still confused as to the appropriate use of the Skills Profile Chart and performance objectives in the program.

Slightly better than one-half of the Title I and classroom teachers were satisfied that Title I instruction was sufficently coordinated with regular classroom assignments. Nevertheless, about one-fifth of the Title I staff and a slightly smaller proportion of the regular school staff reported that the sequence of instruction in Title I was not sufficiently co-ordinated with classroom instruction. (Earlier it was reported that the Title I teachers sought greater communication with the classroom teachers.)

As in the past, the majority of Title I teachers thought that there was too much paperwork required in the program; though, the math teachers appeared to be more tolerant. The daily individual lesson plans, bimonthly and terminal reports,

diagnostic tests and various individual records which must be maintained were the chief sources of the teacher's complaints. While the teachers believed that much of the paperwork and record keeping was necessary (even helpful), they reported that too little time is provided for proper maintenance. For most teachers, some time is available in short segments during the day (e.g. recess), however, about 40% of the teachers reported that they had no time availiable to them during the day for planning and paperwork. With a certain amoung of prescience, a few teachers noted that the changes in the law, permitting Title I teachers to perform "extra duty" in the school will exacerbate this situation. Suggestions offered by teachers to provide the necessary time for planning and paperwork functions include either descreasing the number of students served per period, or providing shorter instructional periods. The provision of planning time is a complicated issue involving individual school scheduling and union regulations. Nevertheless, the Title I administration should address this issue.

Materials

According to most (approximately 90%) of the Title I teachers, general school supplies and instructional materials were available in sufficient quantities for their instruction. While some minor problems were reported during the begining of the year (the particular sites experiencing difficulties were identified in the interim reports), the majority of these

problems were quickly remedied by the Assistant Directors.

The majority of teachers were satisfied with the quality of instructional materials at their disposal. A little more than ten percent of the reading teachers reported that their instructional materials were unsatisfactory, suggesting that teachers should have a greater role in ordering classroom materials. It is not clear, however, what additional role is desired, since teachers are well represented on the materials review committee and all program teachers complete a materials inventory and evaluation at the end of the year.

The most useful reading materials, as reported by the teachers, were the Ginn Reading Series, Cambridge Work-A-Texts and Spellbinder. Most math teachers indicated that the McCormick-Mathers Lab Series was their most useful set of materials.

Student Evaluation

The large majority of Title I teachers were satisfied that the objectives of the program met the needs of the students. Similiarly, all but a small percent of the school principals and classroom teachers felt that, for the most part, the Title I Program was serving those children most in need of help.

Approximately ninety percent of the program staff reported that the diagnostic tests and devices available to them were adequate to identify student strengths and weaknesses. They agreed that the disgnostic tests and devices had provided

them with useful and appropriate diagnostic information on their students. Nevertheless, about one-third of the reading teachers reported that they had experienced difficulties with the print quality and/or timely availiability of the Title I Informal Diagnostic Tests. This problem was cited by some of the teachers as the chief cause of any delay in the implementation of the program at their schools.

Teacher Aides

Good rapport was reported between Title I teachers and aides. Most of the teachers reported using the aide primarily in an instructional capacity, and felt that the presence of the aide had made it easier to individualize instruction.

The morale of the aides was generally high. They reported that their training was adequate and felt competent to handle their classroom responsibilities and duties. Most of the aides (over 95%) were satisfied that their assigned teacher had provided them with adequate direction and had used their services effectively, noting that they regularly had specific daily assignments that their teachers had planned for them. The aides reported that their day was generally full, and that their time had not been spent entirely on preparing materials or correcting tests and papers. All but three aides felt that their presence in the classroom significantly increased the amount of individualized instruction available to the students. All of the aides were content to have been a part of the Title I team.

A frequent complaint of some of the aides this year concerned the types of non-instructional duties they had been required to perform at their schools. While reported problems were not widespread, the aides at a few sites felt that they had been singled out for unsavory tasks (e.g., cleaning the cafeteria). The Title I administration should clarify to all teachers, aides and school personnel the guidelines for assigning extra duties to aides.

Language Arts

Prior to the implementation of the program this year, the principals as well as parents at two schools specifically requested that a Title I language arts program be offered in their schools, in lieu of Title I reading classes. Because of the strong demands for language arts, language arts instruction was permitted to function instead of reading at the Grew and O'Donnell Schools. The program consisted of three language arts teachers (two of which were located at Grew) and their aides.

The administration and supervision of language arts instruction was provided by the Acting Associate Director-Elementary, rather than the Assistant Directors-Staff Development. All of the teachers reported that they fully understood the programs' objectives and guidelines. They noted that their school principals, and the Title I administration had been cooperative and responsive to their needs. Only one of the teachers felt that she could have used more help in establishing her program early in the year.

For the most part, the teachers were satisfied with the communication they had had with the classroom teachers at their school. However, one of the language arts staff did feel that more opportunities should have been provided for language arts teachers to get together and share ideas and methods. One of the teachers also felt that her room was too small for instruction.

The three language arts teachers reported that they had identified individual learning needs for each of their students and had received the full cooperation of the classroom teachers in this respect. The language arts curriculum was primarily focused on individual student needs, however, during one classroom observation, group instruction was observed in the classroom.

General school supplies and language arts materials were appropriate and in adequate supply. The teachers primarily used the McCormick-Mathers Corrective English, the Merrill Spelling for Writing and the Open Court Workshop Kits in their instruction. According to the staff, instruments used for the identification of students' instructional needs were also satisfactory.

The involvement of parents and the work of the aides in the program were rated favorably by the teachers. All of the teachers felt that the language arts program had had a significant and beneficial impact on the students.

New Century Reading Laboratory

As noted previously, five teachers worked in the NCEC lab

setting in three elementary schools. Administrative support was considered satisfactory by the Lab teachers and only one of the Lab teachers felt that her building principal could have been more cooperative. However, Lab teachers were generally not satisfied with the communication they had with classroom teachers, especially in discussions of student progress. Desiring communication among themselves, Lab teachers wanted greater opportunities to exchange ideas, materials and methods with other Title I Lab teachers citywide.

According to the staff, Lab instruction was perceived as effective and met the needs of the majority of students being served. The student/teacher ratio, length of instructional time and diagnostic testing was generally satisfactory. Equipment and material inventory mantainance and general school supplies were satisfactory (one Lab was vandalized in October and much of its inventory had to be replaced or repaired).

Lab teachers were not enthusiastic about the amount of contact they had had with parents (approximately 10-20) and were not sure if parents were sufficiently aware of their children's progress in the Lab. Two of the teachers indicated that Title I paperwork, especially performance objectives, was excessive.

Parent Communications

Over 40% of the reading teachers and 60% of the math teachers were satisfied with the amount of communication they had had with parents of their students. Less that 30% of the new teachers were satisfied with their communication with parents. The

majority of teachers were satisfied with the methods used to report student progress to the parents, but they felt that parents of their students had just not shown enough interest in the Title I program.

Value Perceived

Principals, classroom teachers, Title I staff and parents were overwelmingly satisfied with the work and accomplishments of Title I classes. Not only was significant academic progress perceived in the students who were enrolled in the program, but improvements in such other non-academic areas as behavior and school attitudes were cited as benefits which had accrued to Title I students. Parents and school personnel agreed that Title I was an essential , worthwhile program.

Program Iniatiation and Attendance

Generally, Reading, Math and Language Arts students began instruction prior to the end of September. (These data were obtained from a sample of 1020 reading, 537 math and 130 language arts students selected at random from teachers' attendance records.) The largest proportion of students were enrolled by the end of September for Reading, Math and Language Arts programs. Most NCEC students were enrolled by the first two weeks of October. Approximately 91% of the reading students, 92% of the math students and 87% of the language arts students were enrolled in the program by October 27. About 40% of the NCEC students were

not enrolled until after October 27. Average attendance rates were approximately 75% for reading students, 81% for math students and 84% for language arts students. NCEC students attended approximately 87% of the Title I classes.

In-Service Component

IN-SERVICE OBJECTIVES TEACHERS

Teachers will:

(a) understand the purpose of the subject area performance objectives

(b) be able to diagnose student instructional needs

(c) use materials in a prescriptive way

(d) learn the techniques of individualizing instruction

(e) plan effective and efficient individual daily lessons.

(f) share successful teaching techniques and teacher-made materials

FINDINGS

In-service objectives for Title I reading and math teachers were achieved. Five orientation and ten in-service meetings were favorably received by the large majority of instructional staff. On-site visits by the Assistant Director-Staff Development supplemented the in-service sessions and provided teachers direct assistance on specific problems concerning diagnosis, planning, individualizing and use of materials.

DISCUSSION

Orientation

Five separate in-service workshop sessions were conducted by the Assistant Directors-Staff Development for elementary Title I reading and math teacher orientation. A morning workshop was held on September 11 for all experienced Title I elementary reading and math teachers to review the procedures of the program. In the

afternoon of September 11, and all day September 12, operational aspects of the program were described and demonstrated to first year elementary reading and math teachers. Teachers who were assigned to the Title I program during the month of September were offered an orientation on October 7. Finally, on October 23, all elementary reading and math teachers new to Title I were provided a workshop to recapitulate the program operations and procedures. The three language arts teachers did not participate in the orientation sessions conducted by the Assistant Directors-Staff Development. Rather, they were oriented to Title I by the Acting Associate Director-Elementary.

The majority of the reading and math teachers were satisfied with orientation, however, a few of the more experienced teachers felt that it was repetitious of earlier years. Approximately 10% of the teachers, especially those new to the program, felt somewhat overwhelmed with the amount of information presented, and indicated a need for more time to assimilate all of the material and procedures in Title I.

In response to these comments, the Assistant Directors-Staff Development devoted a substantial proportion of their time at individual schools addressing specific difficulties of the instructional staff. (A more detailed discussion of the orientation process for Title I teachers was provided in the November 1 interim report.)

In-Service

In December and January, the Assistant Directors-Staff Development conducted a survey of Title I teachers to gather suggestions regarding the content and format of the in-service sessions to be conducted during the remainder of the year. The results of this survey were used as a guide in planning and developing the in-service program for the Title I instructional staff.

Math

On January 12, 1979, Title I math teachers and aides attended an in-service seminar focusing on the uses of instructional materials and methods for individualizing mathematics instruction. Math teachers and aides also presented techniques for coordinating performance objectives with teacher or aide constructed math materials. Methods for using the Silver Burdett Math Kit for individualized corrective math instruction were presented by company representatives and consultants.

Ninety-six percent of the teachers and aides reported that the objectives of the workshop were clear, and all of the staff thought that the topics had been well presented. In general, the staff felt that the workshop presentations were practical, helpful and very interesting. The materials and presentations were specifically cited as workshop strengths. Suggestions for improving workshops included offering the workshops to smaller groups, providing a greater emphasis on teaching methods, and

increasing the length of time of the workshops.

Reading

A series of seven workshops were conducted for elementary reading teachers and aides during March and April (March 19, 21, 26, 27; April 3. 5, and 6). These workshops focused on strategies for the improvement of vocabulary and comprehension development. The morning session was devoted to teachers only, while the afternoon session provided opportunities for each teacher and his/her aide to share ideas and creative devices for use in vocabulary and comprehension instruction. Each teacher and aide attended one session. At the conclusion of each session, each teacher was provided with a packet of ideas, materials or methods prepared by the group, to keep as a reference for their own instruction in comprehension development.

Two mini-workshops were also conducted in November and April for reading teachers and aides at selected schools. Presentations at these workshops focused on enhancing the use of specific reading series used at these schools (such as Rand McNally or Ginn).

The responses of the reading teachers and aides to all these workshops were very favorable. Ninety-nine percent of those in attendance agreed that the objectives of the workshops were clear and presentations were effective. With the exception of five percent of the staff, they felt that the information presented was

interesting and informative. The organization of the workshops, as well as the materials and techniques presented were cited by the staff as strengths of the workshops. Suggestions offered by the staff for improving the in-service sessions included: providing more time to assimilate all the new techniques and ideas, and including the aides for the entire workshop session. A substantial number of teachers suggested that future in-service training should provide for more opportunities for demonstrations of materials and their use in the classroom as well as techniques for individualizing instruction.

In addition to the scheduled in-service training and orientation sessions (noted above) the Assistant Directors-Staff Development provided extensive on-site assistance to individual teachers to clarify program procedures or to help them to remediate specific problems they encountered at their particular school.

Beyond their stated training and supervision objectives, the Assistant Directors-Staff Development also conducted in-service during the year for school faculty and parents at several schools. These sessions were primarily conducted to explain the Title I program and to clarify Title I objectives and instructional procedures.

In addition, in April, 1979, the Staff Development Liaison between the Boston Public Schools and the Boston Archdiocese made a presentation on inovative instructional practices used in the Boston program at the State-Wide Title I Conference.

IN-SERVICE OBJECTIVES - AIDES

To enhance the aide's performance in whatever area he/she may be working, using commercial and self-made materials, slides and group services.

FINDINGS

This objective was partially met through the provision of training to the aides. Title I aides were provided program orientation, as well as in-service training in basic math skills and English Composition under the Assistant Director-Aides. However, aides from all Title I programs (Reading, Math, ESL, Community Liaison, etc.) were grouped together for the orientation and the two major in-service training sessions. Reading and math aides were also provided training related to improving their instructional duties through in-service with their respective teachers conducted by the Assistant Directors-Staff Development. Community Liaison Aides participated in an additional in-service training session conducted by the Acting Assistant Director-Community Relations.

A substantial proportion of reading and math aides requested more in-service with an emphasis on improving their instructional duties in the classroom. The aides also requested more in-service time with teachers.

DISCUSSION

Orientation for all Title I aides (Reading, Math, ESL, Clerical, Community Liaison, Community Field Supervisors), was conducted on

September 6, 1978. In addition, Community Liaison Aides attended orientation sessions on September 7 and 8; and orientation for all Title I aides (except ESL) was continued on September 11, 1978. Approximately seventy aides, assigned during the year, were provided orientation on February 13, 1979. During orientation, the aides were given an overview of the Title I program, a description of the policy and procedures used in Title I, and a clarification of their duties and responsibilities in the program. All of the aides assigned in the Title I program were tested with the Able Reading and Math Test either on December 6 or February 13, the results of which were used to plan and develop aide in-service training programs.

On January 23 and 26, 1979, two full-day mathematics workshops were held for approximately 200 Title I aides. Conducted by a consultant, the workshops were designed as a math review for all aides who had scored below 60 on the Able Math Test.

Two mini-workshops were held on February 5 and 9, for approximately 15 aides to provide them with an intensive review of sentence structure and English grammar. Aides were selected for participation in this workshop according to their scores on the Able Reading Test or through the recommendations of their respective teachers.

A series of three English Composition workshops were held for all of the Title I aides (except Kindergarten and clerical aides) on March 9, 10, and 23, 1979. Approximately 100 aides attending

each workshop session were taught English Composition and sentence structure.

As noted previously, reading and math aides were also included in workshops conducted for Title I teachers by the Assistant Directors-Staff Development.

In addition to the above, an in-service workshop was conducted for Community Liaison Aides in March by the Acting Assistant Director for Community Relations. The workshop was specifically designed for improving the role of the Community Liaison Aide in organizing parent support and developing local Parent Advisory Councils.

For the most part, the aides were satisfied with the orientation and in-service training they had been provided with during the year. They reported that the workshops were well-organized and rated the topics presented as either good or excellent. In general, they noted that the workshops had been practical, helpful and interesting. The aides mentioned the workshop speakers and the opportunities to share ideas and methods as workshop strengths.

Despite the training provided, however, the majority of the aides generally indicated a desire for more training, preferably earlier in the year, so that skills acquired could be utilized. Many of the reading and math aides (approximately 40%) also suggested that a greater emphasis be placed on enhancing the aides' instructional responsibilities by offering more opportunities for aides to be involved in workshops with their respective teachers.

In light of these responses, and since this evaluation must

focus on the elementary program, the evaluators must question the provision of a particular training session to all aides without regard to their instructional responsibilities. There is no doubt that the math aides are likely to benefit from training in English Composition, or reading aides from a math review. Nevertheless, aides' training should be specifically directed to their needs based on their instructional role; and the practice of large scale training sessions for all aides should be discarded in favor of training directed specifically for the needs of the elementary reading and math aides. The needs should be formally identified by means of surveys of the aides, their teachers and principals, and coordinated with the Assistant Directors-Staff Development who are responsible for the training and supervision of the elementary teachers.

The role of supervision in enhancing the performance of aides should not be overlooked. Through supervision, a great deal of training can occur which directly reflects the observed and expressed needs of an individual aide in his/her role. It is not clear that such supervision is provided to the aides. Clearly, it is not possible for the sole Assistant Director-Aides to provide this type of supervision to nearly 300 elementary reading and math aides, in addition to her other duties, though she has made great strides in the aide evaluation process. While it can be agreed that the individual teacher provides this intensive supervision, in reality, the teacher and aide must work together daily and not in a supervisor-

supervisee relationship if their working relationship is to be effective. (In fact, it is the understanding of the evaluators that the teachers could not participate in the aide's evaluation because of union rules.) Thus, formal supervision of the aide's instructional role must be assigned to facilitate attainment of this objective "to enhance the aide's performance...".

Supervision of the teachers and aides should be not only as individuals, but as a team, suggesting that the supervisory responsibilities be formalized within the current supervisory duties of the Assistant Directors-Staff Development.

Community Relations Component

COMMUNITY RELATIONS OBJECTIVES

(a) Community Relations staff will form a local Parent Advisory Council in each school;

(b) local PAC members will elect one delegate and one alternate to the district PAC's;

(c) parents will elect representatives to the Title I City-Wide Parent Advisory Council from district PAC's;

(d) elected parents will establish a functioning city-wide Parent Advisory Council;

(e) members of the CWPAC will demonstrate knowledge of federal and state regulations after technical assistance is provided by the staff;

(f) members of the CWPAC will demonstrate knowledge of the operational components of the program;

(g) parents will increase their knowledge of the instructional program by volunteering to visit a sample of Title I schools;

(h) volunteer parents will serve on subcommittees on the assessment of needs and on each of the components in the FY 80 Project Application.

FINDINGS

Local School PAC's were formed in all but three elementary Title I schools. All nine District PAC's were formed with delegates coming from the local PAC's. Approximately 613 local and district PAC meetings were conducted during the 78-79 year, 42% of which contained less than 5 parents. The CWPAC was formed from delegates of the District PAC's, and elected its officers on January 8, 1979. CWPAC members were provided technical assistance primarily by a Community Relations Assistant. Thirty-

eight parents of the CWPAC and Local PAC visited Title I schools during the year. In addition, parents served on six sub-committees: Research and Evaluation, Budget, Election, Planning, By-Laws, Project Planning. A substantial amount of overlap exists among the membership of the CWPAC sub-committees.

DISCUSSION

This year the Community Relations Department of the Boston Title I Project made strong efforts to contact parents of Title I children and enlist their support and involvement at the elementary level. A part-time Acting Assistant Director supervised the efforts of the Community Relations staff consisting of two Community Relations Assistants (CRA) and twelve Community Liaison Aides (CLA). (Eleven of the CLA's are involved at the elementary level.) A third CRA was proposed but not assigned to the Community Relations Component. The primary responsibilities of the CLA's were to assist parents in the target area school districts in forming and maintaining local (school) Parent Advisory Councils. The CLA's were supervised by the Acting Assistant Director of Community Relations and both Community Relations Assistants.

The majority of local (school) PAC's were formed during the first half of the year. Each local PAC reportedly contained at least five members, the minimum criteria for a functioning local PAC. Ninety-seven percent of the Title I schools reported a functioning local (school) PAC. The following elementary schools

still remain without local PAC's:

District 2 : David A. Ellis

District 2 : Henry Higginson

District 1 : Our Lady of Perpetual Help

Records supplied by the Community Liaison Aides show that, during the year, 613 individual Parent Advisory Council meetings were conducted on the local and district levels. This data indicates that, on the average, each local school PAC met about six times during the year. The number of members present at local and/or district PAC meetings is presented in Table 8. Approximately 260 meetings (about 42%) were conducted with less than 5 parents present, while the remainder of the meetings were reported to have 5 or more parent in attendance. Alternatively viewed, only 353 of the local and district PAC meetings contained the minimum number of parents present, averaging 3-4 PAC meetings during the year for each Title I elementary school.

Table 8
Number of Parents Present at Local and/or District PAC meetings during 1978-79

Number of Parents Present	Number of Meetings Conducted
0	75
1	43
2	46
3	38
4	58
5	80
6	85
7	43
8	35
9	28
10 or more	82
cancelled	9

In April a questionnaire was distributed to a sample of parents of Title I children through the Title I teachers to assess the amount of information they had received regarding Title I PAC's. Almost eighty percent of the Title I parents who responded to the survey reported that they had been contacted regarding Parent Advisory Councils in Title I. About 70% of the parents reported that they knew what the role of the Title I PAC was.

The majority of elementary principals also reported that the CLA's had been helpful in developing community support for the Title I program and helping to form Local (school) PAC's.

Approximately 100 local PAC representatives were also surveyed concerning the efforts of the Community Relations Department and the assistance they had been provided with the CLA's and CRA's. Twenty-four responses were secured by local PAC members. In the majority of cases, local PAC members rated the efforts of the Community Relations Assistants (CRA's) and Community Liaison Aides (CLA's) very highly. For the most part, local PAC members reported that they clearly understood the role of the school PAC and their role as members of the PAC. They reported that they had been provided with sufficient information about the Title I program and perceived the local PAC as performing a valuable function in the Title I parental involvement process.

With the exception of seven schools, all of the local school PAC's elected delegates to serve on the District PAC's. District PAC's were formed in all nine Title I school districts, and served

as a vehicle for organizing parent support and involvement in the Boston Title I City-Wide Parents Advisory Council.

Representatives were elected from each of the District PAC's to serve on the City-Wide Parent Advisory Council (CWPAC). Sixty-eight delegates and alternates were elected to the Boston CWPAC. On January 8, 1979, the CWPAC met and elected its' officers.

A questionnaire was distributed to all CWPAC members to obtain their opinions concerning the functions of the Boston Title I Program. Thirty-one parents, representing approximately one-half of the CWPAC responded to the survey. In general, the members reported that the CWPAC meetings, held on a monthly schedule throughout the year, had been interesting, worthwhile, and held frequently enough; and the members who responded reported attending all or almost all of the meetings. Most of the CWPAC members indicated that they clearly understood the role of the CWPAC in the Title I Program and felt that it served a valuable function in the Boston Title I Program.

The CWPAC members reported that the Community Relations Staff had been effective in helping to form the CWPAC, and in providing the group with relevant Title I information. Over three-fourths of the members who responded to the survey indicated that the technical assistance provided by the Community Relations Staff helped them to understand better the federal and state regulations and operational components of the Title I program.

Technical assistance was provided to the CWPAC primarily by

one of the Community Relations Assistants and the Acting Director of the Community Relations Department. The types of technical assistance provided included: maintaining records and approving reimbursements and expenses for participating parents, arranging for members to attend State PAC meetings and other Title I conferences or workshops, parent training, reviewing and distributing the minutes of CWPAC meetings to the membership, disseminating pertinent federal, state, and local information to CWPAC members and serving as liaison between the PAC and the Title I administration. In addition to the duties noted above, a member of the Community Relations Staff was present at all CWPAC meetings to assist the group in conducting meetings, to suggest speakers or workshops leaders, to recommend topics for discussion and to prepare meeting agendas.

To increase their knowledge of the Title I instructional program, members of the City-Wide PAC were also invited to visit a sample of Title I target area schools. The "Visitation Teams" were made up of a CWPAC member, a member of a local Parent Advisory Council and a Community Liaison Aide. The Parents were equipped with an observation checklist which outlined the instructional activities, materials and facilities relevant to the Title I Program. Thirty-eight CWPAC and local PAC members participated in visits to Title I schools.

Finally, members volunteered to serve on six subcommittees of the City-Wide Parent Advisory Council. Table 9 presents the

number of parents who served on each CWPAC subcommittee. An inspection of the composition of the six subcommittees of the CWPAC revealed a substantial amount of overlap among the membership of the committees. The same parents were often members of two or more different subcommittees. Where possible, the Community Relations staff should try to encourage greater representation of all parents in the activities of the CWPAC. Consideration should be given to limiting the number of subcommittees each CWPAC member may serve on.

Table 9
Number of Parents Serving on Six City-Wide PAC Subcommittees

Subcommittee	Number of Parents Represented
Research and Evaluation Subcommittee	26
Budget Committee	23
Election Committee	19
Planning Committee	18
By-Laws Committee	14
Project Planning Committee	11

As a final note, the Community Relations Department associated with the Boston Title I Elementary Enrichment Program has made great strides toward the achievement of its stated objectives, at least in relation to the Elementary program. Recommendations offered in the interim reports (November 1 and February 1) this year suggested

assigning additional staff (one CRA and a full-time Assistant Director) to the Community Relations Department, as proposed. However, in light of project records and other documentation, and the findings of this evaluation, the recommendation to assign additional staff to the Community Relations Department should be reassessed. (The reader is again reminded that this evaluation has dealt with the Elementary reading, math, and language arts program only, and has not considered the success of this Department with other Title I programs.)

RELATED ISSUES

As specified in the RFP, evaluation procedures were designed to examine four additional issues related to the Title I evaluation. These issues were: a) extent of overlap of Title I with other projects, b) determination of a ratio of direct to indirect services, c) implementation of various RMC Title I Evaluation Design Models, d) examination of specific tests and other evaluation instruments used to assess program impact or effectiveness. The procedures used to address these concerns, as well as the evaluator's findings, are presented below.

a. Extent of Overlap

The RFP specifically requested that the evaluators examine the extent of overlap between Title I and other projects in the districts (CH 636, ESAA, etc.). Where overlap between Title I and other supplementary projects was found, the evaluators were requested to identify the school, if possible, and determine whether the overlapping programs were complementary or conflicting. To reveal overlapping programs, interviews were conducted with school principals during the year, and questionnaires sent to principals and Title I teachers in April. Principals were asked to indicate which programs overlapped with Title I and the extent of such overlap. (An example of a program overlapping with Title I would be where a student is receiving Title I reading

services as well as supplementary reading assistance in another project (e.g., CH 636, ESAA).) Only five principals of elementary Title I schools reported any overlap of Title I with other supplementary services offered in their schools. As reported by the principals, the following schools have programs overlapping with Title I:

School	Overlapping Program	Extent of Overlap
East Boston Central Catholic	ESAA	minor overlap - 2 children
Cathedral	ESAA, 766	unknown
Blessed Sacrament	ESAA	minor overlap in grade 6
Jackson-Mann	Chapter 636	some
Kent	Title VII (Bilingual)	unknown

Title I reading and math teachers were also asked to indicate the approximate percentage of their Title I children who they believed were receiving other supplementary reading or math services. About 45% of the reading teachers thought that approximately 1-10% of their Title I students were receiving other supplementary reading services. An additional forty percent reported no overlap, and the other 15% reported overlap of services in excess of 10% of their class. The majority of Title I math teachers (63%) reported that none of their Title I children were receiving other supplementary math services, while almost one-fourth of the math teachers believed that from 1% to 10% of their Title I students were receiving addi-

tional supplementary math assistance under some other project. As reported by Title I reading and math teachers, the approximate percentage of Title I students who were receiving other supplementary services, identified by school, are presented in Tables 10 (reading) and 11 (math). (The particular overlapping programs were not identified by the Title I teachers.)

The issue of overlapping programs is an important concern and should be addressed by the Title I administration. Because of the wealth of supplementary services available to elementary school children in the Boston Public Schools, a certain amount of overlap is likelyto occur. However, different supplementary programs may approach remediation of students' difficulites in different, even conflicting ways. In such cases, not only may the goals of the programs and Title I be in conflict with each other, but the net effect may also be to substantially lessen the impact of each program on the students. The Title I administration should determine the extent of overlapping supplementary services for all Title I students, and where overlap is discerned, Title I should be given preference. In all cases, overlapping supplementary programs should be avoided.

Table 10
Approximate Percent of Title I Reading Students
served by other Supplementary Reading Programs

(Numbers are used to indicate more than one teacher in a school has indicated overlap.)

1-10%		11-25%	26-50%	51-75%	76-100%
Hennigan -3	Trotter	Quincy	O'Reilly	Brooks	Quincy
St. Peter -2	St. Francis	Mather -2	Oak Square	Lyman	Rochambeau
Aggazziz -2	(Roxbury)	Mason -2	Mather	Holland	
St. Ann	Eliott	Blackstone	Mason	Bradford	
Blackstone	Kent	Perkins	Blackstone		
Perkins	Philbrick	Clap	Fenwick		
Mendell	Bradley	Holland	Higginson		
Rochambeau	Farragut -2	Ohrenberger	Stone -2		
Kennedy	Bigelow -2	Emerson	Bradford		
Motley	Cathedral -2	Dickerman -2			
Garfield	St. Ambrose	Winthrop			
Condon	O'Reilly	Nathan Hale			
East Boston	Jackson-Mann				
Central Catholic	Sumner				
Holland	Everett				
Blessed Sacrament	Bowditch				
St. Anthony	Russell -2				
(Allston) -2	St. Kevin				
Warren-Prescott -3	Dever -2				
Tynan -2	Lee				
Prince	Abrahams				
Hurley -2	Ellis				
Curley -2	Higginson				
Marshal -3	Parkman				
Greenwood	St. Patricks				
Aligheri	(Roxbury) -3				
Shaw					

77

78

Table 11

Approximate Percent of Title I Math Students served by other Supplementary Math Programs

1-10%	11-25%	26-50%	51-75%	76-100%
Aggazziz Mendell Rochambeau St. Patricks (Roxbury) Bowditch Ellis	Lyman Holland Hurley	Mather	None	None

b. Determination of Direct to Indirect Services Ratio

As specified in the RFP, the evaluators were requested to determine a ratio of direct to indirect services. The Elementary Enrichment Program (Reading, Math and Language Arts) is but one of many programs funded through the total Boston Title I effort. (Other programs such as the ESL, Early Childhood, Middle School, and High School programs are also funded by Title I.) In order to estimate those costs associated with the Elementary Enrichment Program, a proportion of expenditures in the total budget was allocated to the Elementary Enrichment Program. This estimate was derived from the ratio of Elementary teachers to all Title I teachers (225 to 323 or about 70%). Therefore, to determine the ratio of time the Title I Director would spend on the elementary portion of Title I, for instance, the ratio of 70% was used. (The evaluators recognize that this ratio may be an over-estimate or under-estimate of the actual time or cost of some components, but perceive this method of allocation as the most fair and accurate procedure.)

The Total Title I Budget for 1978-79, as reported in the project proposal, is segmented into three major areas: Administration, Instruction and Research and Evaluation. It may be argued that all services funded through Title I are directly involved with student achievement, however, for the purposes of this report, direct services are defined as those services directly related to student instruction (such as teacher salaries and supervision).

Indirect services are defined to be those costs associated in an indirect way with enhancing student achievement (such as parent participation, research, evaluation, etc.).

Using the method described above, the costs associated with direct and indirect services are shown in the following budget. The direct costs associated with the Boston Title I Elementary Enrichment Program totaled $6,562,345.10 and indirect costs were estimated at $426,425.40. The ratio of direct to indirect costs for the Boston Title I Elementary Enrichment Program (Reading, Math, and Language Arts) is therefore approximately 15 to 1.

Direct Services - Title I Elementary Enrichment Program

I. Administration

*Director	$ 20,538.00	
*Assistant Director-Administration	16,914.10	
*6 Assistant Directors (Elementary)	101,484.60	
*Administrative Coordinator	16,612.40	
*Assistant Director of Aides	16,914.10	
Total Administration Services (Elementary)		$172,463.20

II. Instruction

*5 Assistant Directors-Staff Development	$ 74,169.90 [a]	
*Coordinator of Dissemination	17,677.80	
225 Teachers	4,170,150.00	
225 Aides (Instructional)	1,382,850.00	
*27 Clerical Aides	113,400.00	
*Community Field Coordinator	8,436.40	
Materials-Elementary	190,137.00	
*Dissemination	14,000.00	
*State Dissemination	14,545.70	
Contracted Services (*reading consultant, NCEC, comp. program)	58,455.00	
Equipment (NCEC)	20,000.00	
*Fixed Charges	326,060.00	
Total Instructional Services (Elementary)		$6,389,881.90
Total Direct Services (Elementary Enrichment Program)		$6,562,345.10

Indirect Services - Title I Elementary Enrichment Program

I. Administration		
*Office Personnel Administration	$ 94,661.00	
*Materials, Supplies, travel, telephone, postage, equipment, audit	50,820.00	
Total Administrative Services (Elementary)		$145,481.00
II. Instruction		
5 Assistant Directors - Staff Development	$ 8,241.10 [a]	
*Community Relations Director	16,914.10	
*Community Relations Assistants	30,520.70	
11 Community Liaison Aides	66,000.00	
*Community Relations Materials	700.00	
*Contracted Services (CRA)	12,103.00	
*Reimbursement - Parent expenses	35,000.00	
Total Instructional Services (Elementary)		$169,478.90
III. Research and Evaluation		
*Personnel	$ 65,145.50	
*Materials, travel, equipment, Contracted Services - Elem Enrichment	27,720.00 18,600.00	
Total Research and Evaluation Services (Elementary)		$111,465.50
Total Indirect Services (Elementary Enrichment Program)		$426,425.40

*indicates .70 proportionate allocation of total cost of component
[a]assumed that 90% of Staff Development allocation was direct and 10% indirect (teacher workshops)

c. Implementation of Various RMC Title I Evaluation Design Models

As specified in the RFP, the evaluators were requested to implement, on a pilot-test basis, various Title I Evaluation Design Models. At the present time, three different evaluation design models have been proposed by the Office of Education for the evaluation of Title I projects. These are referred to as Model A (the pretest-posttest norm referenced design), Model B (the control group design) and Model C (the special regression model). Each of the models are similar in that they are designed to assess the effectiveness of the Title I effort by comparing Title I student achievement to an expected, no-treatment, criterion. However, each model differs in how the no-treatment expectation is developed.

In Model A, the no-treatment expectation (e.g., how students would have done without Title I assistance) is estimated from a comparison of students' Fall (pretest) to Spring (posttest) Normal Curve Equivalent (NCE) scores, or percentile rank. It is expected that without Title I instruction, students' Fall and Spring NCE scores and percentile ranks would remain unchanged, If the students' average posttest status is higher than the no-treatment expectation, that is, if students show a gain in NCE from pre- to posttestings, then the assumption is made that the gain was a result of participation in the Title I project. Unfortunately, this design lacks the scientific rigor necessary to exclude several competing explanations of student gain.

Model B is a control group design which requires that two equivalent groups of students be established. Each group is provided similar educational experiences, with the singular exception that the treatment group receives Title I instruction, while the control group does not. The no-treatment expectation in this model is derived from the achievement of the control group. When the treatment group's performance is superior to the control group's, it can be assumed that the Title I project was effective. While this model can be the most rigorous of the three evaluation designs, it is rarely feasible to implement since, in an ideal situation, it requires that a group of students who are eligible for Title I services be denied instruction for research purposes, or under practical circumstances the control group is selected from existing students comparable to Title I students but not receiving special remedial instruction.

Model C is a regression based evaluation design. While this model is more complicated than the previous models both in its implementation and in its statistical analysis, it is considered a more rigorous evaluation model than Model A. The no-treatment expectation in Model C is derived by regression analysis from the scores of students who did not receive Title I instruction. The impact of Title I instruction is measured by comparing the actual achievement of Title I students to the derived expectation. This model was pilottested in the Holland, Mather and Blackstone Schools.

A complete description of the implementation of the model, and the subsequent analyses and results are discussed below.

Implementation of Model C

According to the Title I Evaluation Guidelines published by the Office of Education, for implementation of Model C, both Title I and non-Title I students must be pre- and post-tested. Those students who fall below a selected cutoff score on the pretest are assigned to the treatment group (Title I) while the remaining children form the comparison group (non-Title I).

Students in grades 2 through 5 in the Holland, Mather and Blackstone Schools were pre- and posttested with the Reading Subtest of the MAT in May of 1978 (pretest) and 1979 (posttest). Students scoring below the 40th percentile (NCE score = 44.7) on the pretest were selected to receive Title I instruction. These students formed the treatment group. Those students scoring above the 40th percentile on the pretest were not provided Title I services, thereby forming the comparison group. (Students scoring below the 40th percentile and not selected for Title I instruction, or students scoring above the 40th percentile but receiving Title I were excluded from the analysis.) Table 12 presents the number of students at each grade who were included in the treatment and comparison groups.

Table 12

Number of Students in the Treatment and Comparison Groups by Grade

	Number of Students		
Grade	Treatment Group	Comparison Group	Excluded
2	58	104	60
3	79	71	33
4	97	73	27
5	88	65	17

It should be noted that the implementation of the Model C evaluation design requires that all students below a specified cutoff score on the pretest be provided Title I, while all students above the cutoff be excluded from Title I. As reported by the Technical Assistance Center, even minor violations of this requirement makes the resultant calculations and inferences provided by the model questionable. In the present situation, this would require that all students in grades 2 through 5 at the Holland, Mather and Blackstone Schools who scored below the 40th percentile be selected for Title I, and all students above the 40th percentile be excluded from Title I. Such a strict adherence to a single cutoff point is rarely feasible in actual practice, and was not followed in the present pilot test. It was observed that some grades, up to 20% of the treatment group were not identified as receiving Title I. Thus, the resultant inferences provided by the model are of dubious value. This implementation and evaluation results of Model C in the Holland, Mather and Blackstone Schools should be considered only in an experimental sense, due to the large overlap of students in the treatment and comparison groups.

Student pretest and posttest percentile scores were converted to NCE scores for the purposes of analysis. The no-treatment

expectation was derived from the comparison group's posttest-on-pretest regression line. That is, for each grade, an extrapolation of the posttest-on-pretest regression line of the comparison group was used to develop the expected achievement of the treatment group had they not received Title I instruction. This procedure is graphically portrayed in Figure 7.

Figure 7 presents the scatterplot of pre- and posttest scores for grade 2 students in the comparison group. Each asterisk (*) denotes the placement of one student in the scatterplot. (Where more than one student received identical pre- and posttest scores, they are denoted by a number.) The regression line of the post-on-pretest NCE scores for the comparison group is represented by the solid diagonal line (RC) running through the plotted student scores. The no-treatment expectation was then developed by extending this line downward into the treatment group area of the graph. According to the model, if Title I instruction had not been provided to the treatment group, their scores would be expected to cluster around this line, and their mean pre- and posttest NCE would be located on the extended portion of this line. The no-treatment expectation is mathematically represented by the formula:

$$\hat{Y} = A + B(X)$$

Where: A = intercept of RC
B = slope of RC
X = mean pretest score of the treatment group
$\hat{Y}$ = expected posttest score of the treatment group

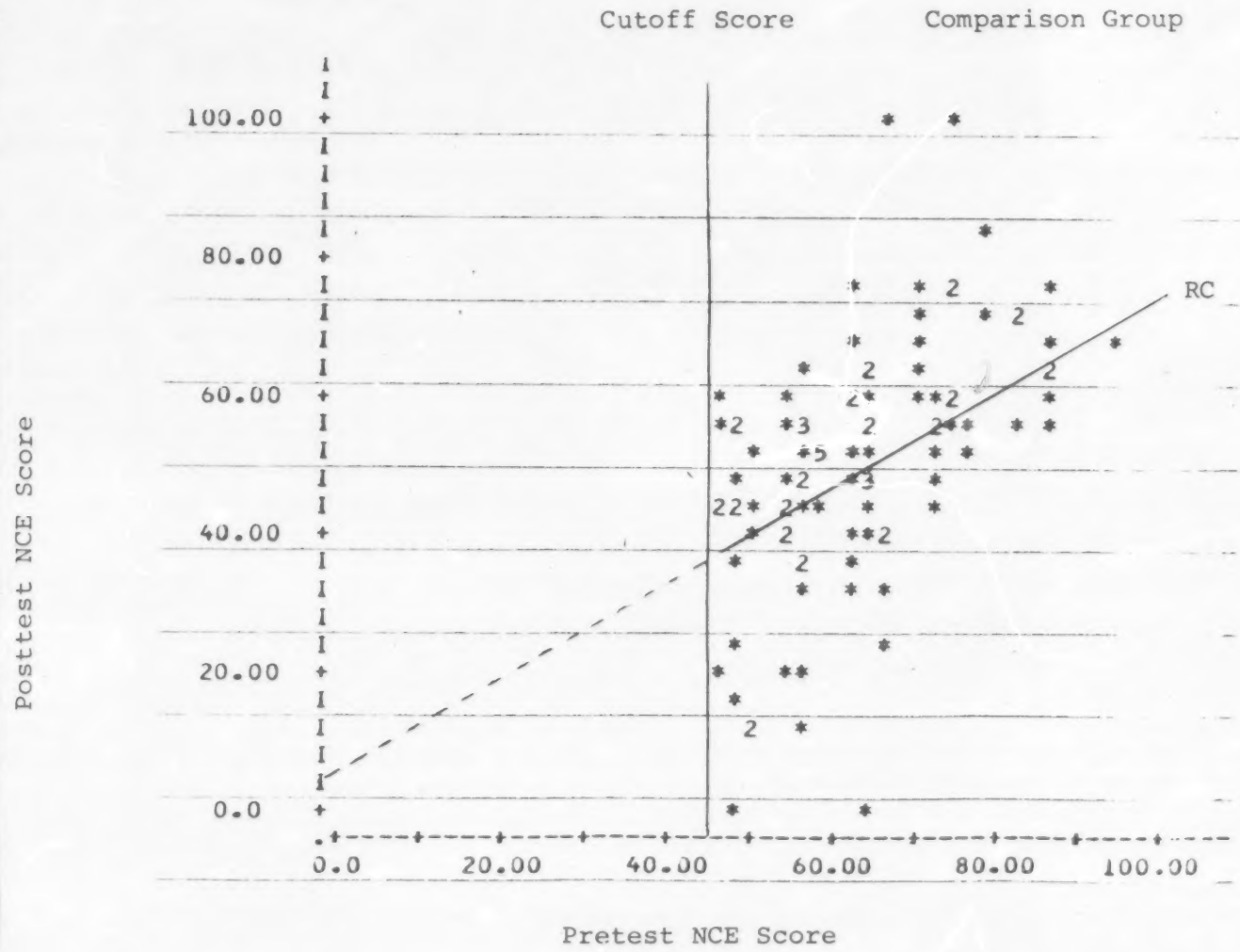

Figure 7: Posttest on Pretest Scatterplot and Regressions Line for Grade 2 Comparison Group Students

The impact of Title I instruction is derived by comparing the actual posttest mean for the treatment group to the expected posttest mean $(\hat{Y})$.

If the program had had no impact upon its participants, the difference between the expected posttest score $(\hat{Y})$ and the actual posttest score would be zero. On the other hand, if Title I instruction had been beneficial, the effect of the impact would be shown by the difference in the expected and actual posttest means for the treatment group. The magnitude of the differences between the expected and actual achievement of the treatment group is directly provided by a measure of the difference on the two scores. The impact of Title I for grade 2 students is graphically represented in Figure 8.

Figure 8 displays the posttest-on-pretest scatterplot and separate regression lines for comparison and treatment group students in grade 2. RC denotes the regression line for grade 2 comparison group students. The extrapolation of this line downward (designated by a dotted (---) line) shows the no treatment expectation for Title I students. The regression line for the treatment group is denoted by RT. This line falls above the no treatment expectation, indicating the impact of Title I instruction for Title I students.

These same results can be presented mathematically. Using the formula $\hat{Y} = A + B(X)$, the no treatment expectation was

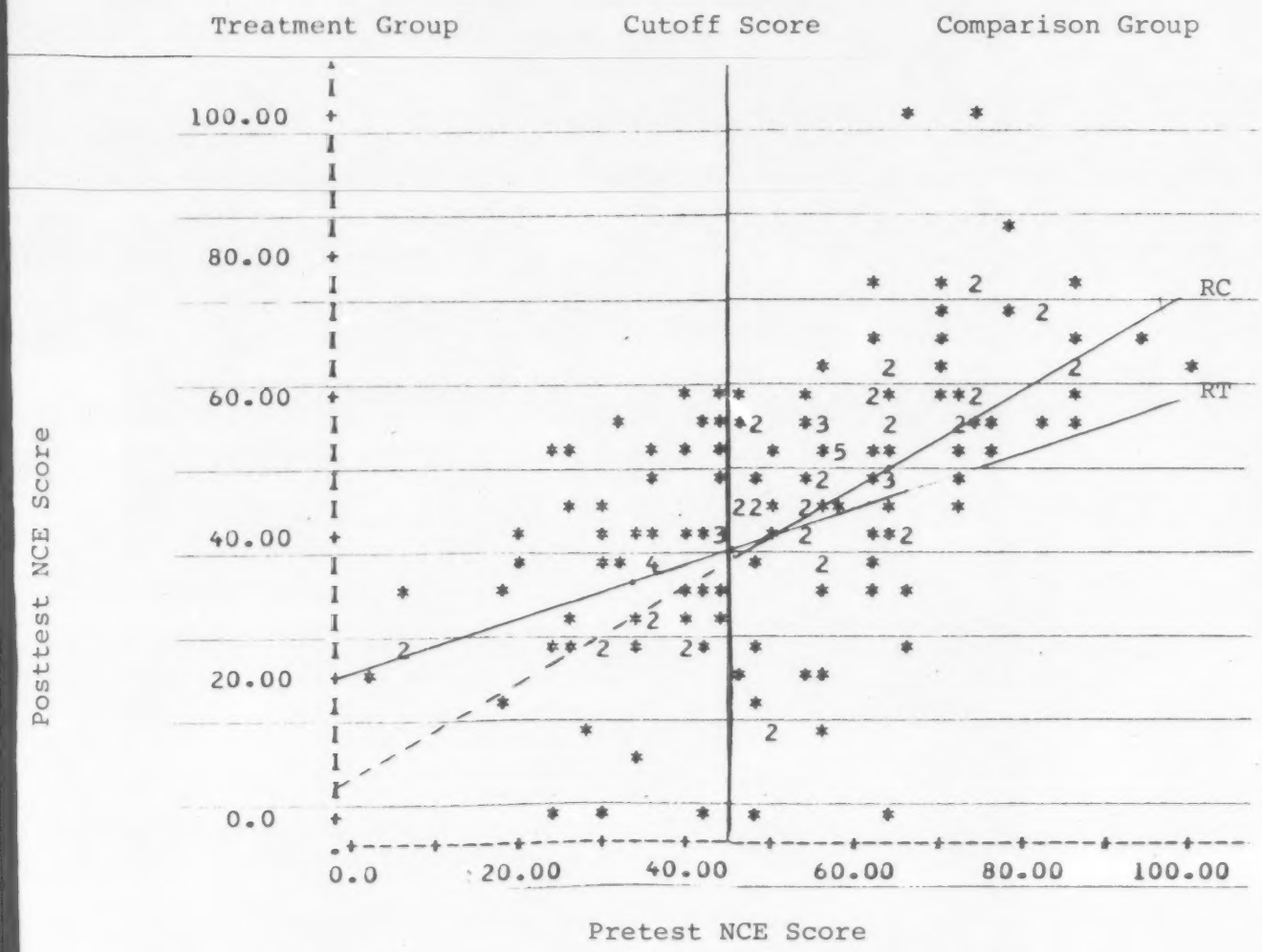

Figure 8: Posttest on Pretest Scatterplot and Regression Lines for Comparison and Treatment Group Students in Grade 2

derived for Title I students. For grade 2 the no-treatment expectation was determined to be:

$$\hat{\bar{Y}} = A + B(\bar{X})$$

$$= 1.5 + .78\ (32.6)$$

$$= 26.9$$

The actual posttest mean achievement for grade 2 students is reported to be 34.0 . Hence, as graphically shown in Figure 8 , Title I instruction did have a positive impact upon grade 2 students in reading.

The effect of Title I upon grade 2 students was to increase their average NCE reading score by approximately 7.1 NCE score units.

These results were similarly calculated for grades 3 through 5. For each grade a separate no treatment expectation was derived based upon an extrapolation of the posttest-on-pretest regression lines from each grade's comparison group. Table 13 presents the pretest mean NCE, posttest-on-pretest regression line, no-treatment expectation and actual posttest mean NCE of Title I reading instruction upon the treatment group for each grade. As the figures in Table 13 indicate, according to Model C analysis Title I instruction had a positive impact upon the average reading achievement of students in grades 2 and 3 and no impact on students in grades 4 and 5.

Table 13

NCE Score Results for Grades 2-5

Model C Pilot-Test

Grade	Pretest $\bar{X}$ (Title I Group)	Posttest-on-Pretest Regression Line	No Treatment Expectation	Actual Posttest Mean (Title I Group)
2	32.6	Y = 1.5 + .78(X)	26.9	34.0
3	28.9	Y = 6.1 + .97(X)	21.9	30.1
4	32.1	Y = 9.1 + .71(X)	31.9	30.2
5	27.2	Y =13.3 + .71(X)	32.6	31.8

a. Testing Program

A pretest - posttest norm-referenced evaluation design was planned for the evaluation of the Boston Title I Elementary Enrichment Program (reading, math and language arts) as prescribed by the Title I guidelines for implementation of Model A evaluation designs. As specified in the ESEA Title I User's Guide, four operational requirements imposed by Model A are:

1) Pretesting must be accomplished after project participants have been selected.

2) Both pretesting and posttesting must be accomplished at times which are close to empirical normative data points for the tests used. (Testing should be accomplished no earlier than two weeks before and no later than two weeks after the midpoint of the period during which the normative data were collected.)

3) The same level and form of the same test should be used both pre and post, whenever possible.

4) The test level should be selected which is appropriate for the functional level of the child.

According to the model, the validity of the design, as well as the accuracy of evaluative interpretations based upon the test data, are highly dependent upon a strict adherence to these specified operational procedures.

A pretest - posttest norm-referenced evaluation design was employed in the Boston Elementary Enrichment Program. Depending upon whether students participated in the math or language arts program, the Mathematics Subtests or Language Arts Subtests of the California Achievement Test (CAT) (1970 edition) were administered

as a pretest and posttest. The same level and form of the CAT was administered as pretest in the first week of October, 1978, and as posttest in the week of May 8, 1979, respectively. Teachers administered the tests, as prescribed by the test publisher and the tests were machine scored. The Department of MIS Title I Office of Research and Evaluation was responsible for the administration of both the pre- and posttests of the CAT.

Students enrolled in the Title I reading program were pre- and posttested with the Reading Subtests of the Metropolitan Achievement Tests (MAT). The students were pretested with the reading subtests of the 1970 edition of the MAT in the first week of October, while the 1978 edition of the MAT was administered as a posttest on May 8, 1979. As with the math and language arts tests, teachers administered the tests as prescribed by the test publisher, and all tests were machine scored. The Department of MIS Title I Office of Research and Evaluation was responsible for the administration of the pretest; however, the May administration of the MAT was conducted under the regular city-wide testing program of the Boston Public Schools. Table 14 presents a listing of the pre- and posttests administered in the Title I Elementary Enrichment Program.

The operational requirements for Model A and its implementation in the Boston Title I Elementary Enrichment Program are discussed below.

Table 14

Level and Form of Tests Used as pre- and post- measures in the Boston Title I Elementary Enrichment Program

	Metropolitan				California			
	Pre		Post		Pre		Post	
Grade	Level	Form	Level	Form	Level	Form	Level	Form
1	-	-	Primary I	JS	-	-	Level I	A
2	Primary I	H	Primary II	JS	Level I	A	Level I	A
3	Primary II	H	Elementary	JS	Level II	A	Level II	A
4	Elementary	H	Elementary	KS	Level II	A	Level II	A
5	Intermediate	H	Intermediate	JS	Level III	A	Level III	A
6	Intermediate	H	Intermediate	KS	Level III	A	Level III	A

1) Pretesting must be accomplished after project participants have been selected.

Reading, Mathematics and Language Arts students were identified for program participation based upon reading, math or language arts test scores obtained in May of the previous year. All pretesting was accomplished after students had been selected for project participation. The pretest was not used as a selection device in any of the elementary enrichment programs.

2) Both pretesting and posttesting must be accomplished at times which are close to empirical normative data points for the tests used. Testing should be accomplished no earlier than two weeks before and no later than two weeks after the midpoint of the period during which the normative data were collected.

This requirement exists because the normative data of the tests are used as a substitute for a control group. Students who were enrolled in the Math and Language Arts programs were pre- and posttested with the 1970 edition of the California Achievement Tests. All pretesting was accomplished during the first week of October, 1978, and posttests were administered during the week of May 8, 1979. According to the test publisher, the standardization process for the CAT (1970 edition) was accomplished during the months of February and March. (The norms presented by the test publisher for Spring and Fall were extrapolations from the February-March testing period.) The pre- and

posttest administrations of the CAT in October and May do not correspond, as recommended, to the February - March normative data points of the CAT, 1970 edition. It would seem that the normative data available for this test would not be appropriate under the Model A evaluation design.

The meaningfulness of a norm-referenced evaluation design, such as Model A, is diminished by unknown proportions under these conditions. Where possible, a test should be used which has been empirically normed for both Spring and Fall testing. (It should be noted that a more recent edition of the CAT, published in 1978, reports empirical normative data for Fall and Spring testing periods.)

Title I reading students were pre- and posttested with the Reading Subtests of the Metropolitan Achievement Tests (MAT). Whereas students were administered the 1970 edition of the MAT in the first week of October as a pretest, the 1978 edition of the MAT was used as a posttest on May 8. Both the 1970 and 1978 editions of the MAT were empirically normed in October and April. (The reported standardization midpoints are October 15 and April 20.) The administrations of the pre- and posttests in Boston are very close to the Model's requirements of falling within two weeks of the midpoints of the instruments' standardization period.

3) The same level and form of the same test should be used both pre and post, whenever possible.

As shown in Table 14 , the same level and form of the California Achievement Tests were administered to math and language arts students in October and May. However, reading students were administered the 1970 edition of the Metropolitan Achievement Tests (MAT) in October, and the 1978 edition of the MAT in May. Obviously, the same form and level of the MAT's were not administered as pre- and posttests, since different editions of the tests were used. The reading subtest of the 1978 MAT is a substantially different test from the 1970 version. The format, items and norming populations are not identical, and as a result, scores obtained from the tests are not directly comparable.

Fortunately, the value of the data is not totally lost, since the MAT has equated scores on the 1970 and 1978 tests and some comparison of Fall to Spring testing is possible (c.f., analysis of data related to reading objectives). This issue probably could not be avoided this year since pretesting had to be done so early in the Fall.

Since the city-wide testing program is the standard to which the Title I testing program must adjust, it is likely that this requirement can never be met entirely because of the way the MAT has established its levels. For example, the Elementary level was administered at the end of grade 3, as designated by the publisher. It would not be feasible to administer this same test as a pretest at the beginning of grade 3, because at that point, the test would be much too difficult for the students

resulting in invalid scores. However, it would be possible at grade 5 where the Intermediate level is appropriate for both Fall and Spring administrations. Alternative considerations include use of Model C, or a separate Title I testing program done on a sampling basis. It should be noted that the same level - same form rule is highly recommended, though not necessarily required.

4) The test level should be selected which is appropriate for the functional level of the child.

A test is considered to be appropriate for the functional level of the child when the average student can answer approximately 50% of the items correctly. If the average child answers a third or fewer of the items of the test correctly, then the next lower level of the test might be more suitable. This is generally the case with Title I students. Consideration should be given to establishing an off-level testing program for the evaluation of the Title I project. This is likely to entail another testing session for Title I students separate from the city-wide testing program. The Department of MIS Office of Research and Evaluation should examine the distribution of test scores of Title I children to determine whether off level testing would be more appropriate.

Reading Gain by Program Attendance

A study was conducted by the evaluators to assess the achievement of Title I students by their rate of attendance in the program. Twenty public elementary Title I schools were randomly selected across the city and all Title I students in grades 2 through 5 were included in the study. For each grade students were ranked in order of days of Title I attendance and grouped into quartiles. Hence, the first quartile (below average attendance) was composed of 25% of the students in each grade with the least number of days of attendance in Title I. Similarly, the fourth quartile (above average attendance) represents 25% of the students in each grade with the best attendance rates. Average days of attendance in Title I, pretest and posttest NCE reading scores and NCE gain were computed for each quartile within each grade. These figures are presented in Table 15. (It should be noted that mean pretest standard scores were transformed to comparable posttest standard scores prior to conversion to NCE scores.)

As the figures presented in Table 15 indicate, the mean NCE reading score gains for each quartile within each grade were generally inconsistent. On the average, students demonstrated

Table 15

Summary of Pre and Posttest NCE Scores
by Program Attendance - Grades 2-5

	1st Quartile (below average attendance)				2nd Quartile				3rd Quartile				4th Quartile			
		Mean NCE				Mean NCE				Mean NCE				Mean NCE		
Grade	N	Pre	Post	Gain	N	Pre	Post	Gain	N	Pre	Post	Gain	N	Pre	Post	Gain
2	49	20.4	43.6	23.2	44	17.3	40.1	22.8	44	17.3	40.1	22.8	46	20.4	40.1	19.7
	Average Days Attendance = 111.7				Average Days Attendance = 131				Average Days Attendance = 140				Average Days Attendance = 153			
3	52	27.2	35.1	7.9	46	24.2	37.7	13.5	46	17.3	33.7	16.4	56	17.3	33.7	16.4
	Average Days Attendance = 104				Average Days Attendance = 127				Average Days Attendance = 140				Average Days Attendance = 153			
4	55	27.2	32.3	5.1	51	27.2	33.7	6.5	58	23.0	33.7	10.7	54	24.2	33.7	9.5
	Average Days Attendance = 102				Average Days Attendance = 123				Average Days Attendance = 134				Average Days Attendance = 148			
5	69	30.7	32.3	1.6	70	24.2	30.7	6.5	73	30.7	36.5	5.8	72	29.1	30.7	1.6
	Average Days Attendance = 76				Average Days Attendance = 124				Average Days Attendance = 137				Average Days Attendance = 150			

slightly better NCE score gains in the second and third quartiles (representing average attendance). However, this was not consistent for each grade. Students in grade 2 showed greatest NCE reading score gains in quartiles 1, 2, and 3, while students in grades 3 and 4 demonstrated strongest NCE gains in the third and fourth quartiles of attendance. Grade 5 students, on the average, made strongest gains in NCE reading scores in quartiles 2 and 3.

SUMMARY

Instructional Component

Administration and Supervision

Strengths:

1. Title I teachers, principals and regular school staff clearly understood the program's guidelines and objectives.

2. Title I teachers were satisfied with the cooperation of principals and the Title I administration.

3. The supervision provided by the Assistant Directors-Staff Development was acclaimed by the Title I instructional staff.

Weaknesses:

1. One-fifth of the Title I teachers overall, and two-fifths of the new teachers reported a need for extra on-site help early in the year.

Communication

Strengths:

1. The majority of Title I staff (80%) maintained good communication with classroom teachers. Principals and school staff were satisfied with the communication they had with Title I teachers.

2. School staff (80%) did not perceive Title I as interfering with regular school functions.

Weaknesses:

1. Over one-half of the program staff preferred greater communication with classroom teachers.

2. One-third of the Title I teachers requested more interaction with their colleagues city-wide.

Facilities

Strengths:

1. Most of the staff were satisfied with their assigned teaching station. Minor problems were quickly resolved at most sites by the Title I Assistant Directors.

Weaknesses:

1. About 20% of the Title I teachers expressed concern with their teaching facilities, identifying specific areas such as outside distractions, room size, temperature, etc.

Instruction

Strengths:

1. Individual needs were successfully identified for all Title I students, with the cooperation of classroom teachers.

2. Individualized instruction was reported and generally observed at all sites.

3. The Title I Skills Profile Chart was reported as a useful instructional guide by the teachers.

4. On-site visits conducted throughout the year by the Assistant Director-Staff Development helped teachers to identify student needs and individualize instruction.

Weaknesses:

1. Approximately 20% of the teachers reported insufficient instructional coordination between Title I and regular classes.

2. Planning and paperwork was still perceived as excessive by the majority of Title I teachers, in relation to the amount of time provided to complete these requirements.

Materials

Strengths:

1. General school supplies and instructional materials were reported in sufficient quantities at most sites. Spot shortages of specific materials were quickly remedied by the Title I Assistant Directors.

2. The quality of instructional materials was excellent.

Student Evaluation

Strengths:

1. Title I instruction was perceived as meeting the needs of the educationally disadvantaged students.

2. Diagnostic tests and instruments were satisfactory for identifying student strengths and weaknesses.

Weaknesses:

1. Approximately one-third of the reading teachers reported poor print quality and delays in receiving their diagnostic tests and devices.

Teacher Aides

Strengths:

1. Rapport between Title I teachers and aides was excellent.

2. Teacher aide morale was high.

3. The training, supervision, and direction offered the teacher aides was reported satisfactory.

Weaknesses:

1. At some sites problems were reported by the aides concerning the types of extra duties assigned to them in their schools.

Language Arts

Strengths:

1. The objectives of the program were clearly understood by language arts teachers. Cooperation of principals and the Title I administration was satisfactory.

2. Individual student needs were identified for all students, and instruction was reported as individualized.

3. General school supplies and instructional materials were adequate in supply and quality.

Weaknesses:

1. One language arts teacher wanted increased opportunities to meet with her colleagues.

2. One language arts teacher thought her assigned room was too small for instruction.

New Century Reading Labs

Strengths:

1. Administrative support for Lab teachers was reported satisfactory.

2. Lab instruction was perceived as satisfactory by the staff, as well as the student: teacher ratio, diagnostic tests and length of instructional time.

3. Equipment and material inventory was satisfactory. (The replacement or repair of materials at the vandalized Lab was efficiently handled by the Title I Administration.)

Weaknesses:

1. Communication with classroom teachers was poorly rated by Lab teachers.

2. Lab teachers wanted more contact with other Title I teachers city-wide.

3. Parent interest in the NCEC program was inadequate, according to Lab teachers.

4. Two Lab teachers felt that Title I paperwork was excessive.

Parent Communications

Strengths:

1. Over 40% of the Title I reading staff and 60% of the math teachers reported adequate communication with parents of their students.

2. Methods used to report student progress to parents was perceived as satisfactory.

Weaknesses:

1. Less than 30% of the new Title I teachers were satisfied with parent involvement in Title I.

Value Perceived

Strengths:

1. Regular school staff and Title I staff agreed that the program had had a beneficial impact on the students in both academic and non-academic areas.

2. Parents and school staff perceived Title I as worthwhile and essential.

Student Outcomes

Strengths:

1. Students in grades 2 through 6 equalled or exceeded the specified criterion of .7 G.E. months per month of instruction in reading, and gained in percentile standing from pre- to posttest. Grade 1 reading students finished the year an average of 2 months below grade level.

2. Gains in mathematics were large at all grade levels and far exceeded the projected criteria. Students gained in percentile rank from pre- to posttest. Grade 1 math students ended the year about 1 month below grade level.

3. Language Arts students in grades 3-5 demonstrated gains in excess of the specified criterion, and advanced in percentile standing between pretest and posttest.

In-Service Component

In-Service - Teachers

Strengths:

1. Five orientation and 10 in-service meetings were faborably received by the majority of the Title I instructional staff.

2. Frequent on-site visits by the Assistant Directors-Staff Development provided teachers with personalized assistance.

3. A survey was conducted of all program teachers by the Assistant Directors-Staff Development to assess the in-service needs of the staff.

4. The Assistant Directors-Staff Development also conducted in-service seminars for school faculty and parents to explain Title I objectives and instruction.

Weaknesses:

1. Language Arts teachers were not included in Title I teacher orientation sessions.

2. Some teachers requested longer workshop and orientation sessions to assimilate all of the material presented.

In-Service-Aides

Strengths:

1. Title I Aides were provided program orientation and in-service training sessions in math and English composition skills.

2. Reading and math aides were provided in-service with teachers by the Assistant Directors-Staff Development.

3. Community Liaison Aides were provided in-service training through the Community Relations Department.

4. All Aides were tested with the Able Reading and Math Test.

5. The majority of aides reported satisfaction with orientation and in-service seminars.

Weaknesses:

1. Aides from all Title I programs were grouped together for orientation and in-service sessions conducted by the Assistant Director-Aides.

2. Reading and Math Aides requested more in-service with teachers to increase their classroom instructional skills.

3. Aides requested in-service programs be conducted earlier in the year.

4. Formal supervision of the Aides is unclear.

Community Relations Component

Strengths:

1. Local School PAC's were formed in all but 3 elementary Title I schools and all nine District PAC's were formed.

2. The Boston CWPAC elected its' officers on January 8, 1979.

3. Local, District and City-Wide PAC members were satisfied with the technical assistance provided them by the Community Relations Department.

4. Parents of Title I students were involved in school visits and six sub-committees of the CWPAC.

Weaknesses:

1. A considerable amount of overlap exists among the membership of the CWPAC sub-committees.

2. About 42% of Local and/or District PAC meetings were conducted during the year with less than 5 members present.

RECOMMENDATIONS

1. The Assistant Directors-Staff Development should increase initial support to new Title I teachers, either on-site or in group settings to assist them in establishing programs at their schools.

2. The Title I Administration should extend efforts to increase communication between Title I teachers and classroom teachers by inviting classroom teachers to visit Title I classes and scheduling opportunities for Title I and classroom teachers to meet, communicate and coordinate their instruction.

3. The Assistant Directors-Staff Development should extend opportunities for Title I staff to meet and exchange ideas, methods and instructional techniques.

4. The Title I Administration should strive to equip every Title I teacher with the best possible instructional facilities, particularly where problems such as temperature, outside distractions, accommodations and the like are evident.

5. The Title I Administration should study the amount of time available to Title I teachers to complete paperwork requirements in light of the expected utilization of Title I teachers for extra school-related duties.

6. The Associate Director-Research and Evaluation should consider eliminating teacher recording of achievement on specific performance objectives onto the performance objective summary sheets.

7. The Assistant Directors-Staff Development should insure that diagnostic tests and instruments are of appropriate quality and are promptly delivered to all teachers early in the year. Professionally print the final form of the diagnostic tests during the summer.

8. The Title I Administration should clarify to all school personnel the procedures and guidelines for assigning extra school-related duties to Title I staff.

9. The Acting Associate Director-Elementary should assign the supervision of the language arts teachers to the Assistant Directors-Staff Development.

10. The Assistant Directors-Staff Development should include language arts teachers in orientation sessions designed for Title I staff and schedule opportunities for language arts teachers to meet and exchange ideas and methods.

11. The Title I Administration should invite classroom teachers in NCEC Lab schools to visit the Labs in an attempt to increase communication with NCEC Lab teachers.

12. The Assistant Directors-Staff Development should provide NCEC Lab teachers with opportunities to meet and discuss ideas and methods with other Title I Lab teachers city-wide.

13. The Title I Administration should continue efforts to increase parental communication, focusing on the invitation of personal contact between teachers and parents.

14. The Assistant Director-Aides should focus in-service training for aides on their specific needs within the particular program to which they are assigned.

15. The Assistant Directors-Staff Development should schedule in-service opportunities for Title I teachers and aides together, early in the year so that the skills acquired may be utilized during the year.

16. The Assistant Directors-Administration and Staff Development should increase their interaction with the Assistant Director-Aides concerning the supervision of the aides.

17. The Community Relations Assistants should design and conduct training for Community Liaison Aides on conducting effective meetings, community organization procedures, Title I guidelines and the like.

18. The Community Relations Assistants and the Community Liaison Aides should concentrate their efforts to form local PAC's at those schools which have not formed PAC's.

19. The Community Relations Staff should continue their efforts to increase the representation of parents serving on City-Wide PAC sub-committees.

20. The Community Relations Assistants and Community Liaison Aides should strengthen their efforts to increase the number of parents in attendance at local PAC meetings.

21. The Title I Administration should develop and disseminate a written policy concerning the priority of Title I services and the need to avoid duplication with other supplementary services. The Assistant Directors-Administration should identify specifically where overlapping supplementary services for each Title I student exists.

22. The Associate Director-Research and Evaluation should consider using the 1978 edition of the California Achievement Tests for the evaluation of Math and Language Arts instructional objectives.

23. The Associate Director-Research and Evaluation should examine the distribution of test scores of Title I children to determine whether off level testing would be more appropriate.

24. The Associate Director-Research and Evaluation should continue to pilot test alternative evaluation designs such as Model C.